SANDOW'S MAGAZINE

2d. **OF PHYSICAL CULTURE.** 2d.

January 4th, 1906.

Digitized by Google

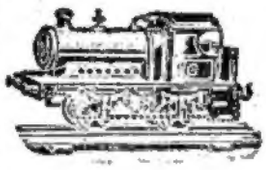
Gamage's Bazaar

Great Novelty!
The . . Animated Jap.
Price **6d.** Postage 3d.

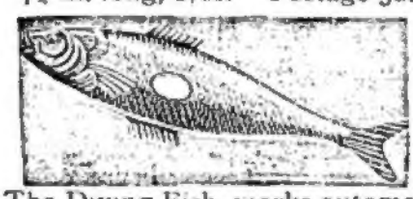
Thousands of Clockwork figures —at— popular prices.

Gamage's Speciality. Capt. Boyton on his Water Tricycle.

Clockwork movement **5/11** Post 4d.



Mid. Rly. Tank Loco. Gauge, 1¾ in. 29592. Brass Boiler, &c. Fine Model, 7¼ in. long, **3/11.** Postage 3d.



The Diving Fish, works automatically, **2/9**, Postage 4d.

All the latest games for parlour & club. Send for Catalogue.

Gamage's New Safety 'Bronko' Hobby Horse, fitted with Cowboy Saddle & Stirrups, very safe for the child.
Size D, **31/6.** Size C, **37/6.**

NOW OPEN!
ADMISSION FREE.

The Greatest Exhibition of Toys in London.
Over 4 acres of Floor space.
Surpasses all previous efforts.

Great Show Pieces:
See the Embarkation of the Army Corps, &c.
Hall of Mystery,
Conjuring Entertainment.

Demonstration of Fretwork, Paper Work, Cloisonne Work, Oriental Brass Work, &c., &c.

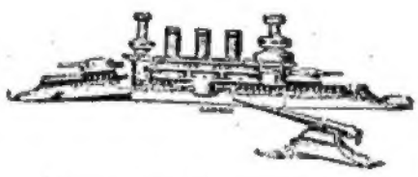
MODEL BOOT FACTORY.
Technical Instruction for everybody. Boots made before your eyes.

Come early and **DON'T** come alone.

Thousands of useful presents in all Depts.
Father Christmas's advice.
Send for my Post Free Xmas Catalogue.

My address is:

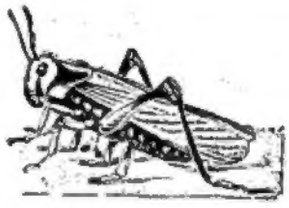
A. W. GAMAGE, LTD., HOLBORN, LONDON. E.C.



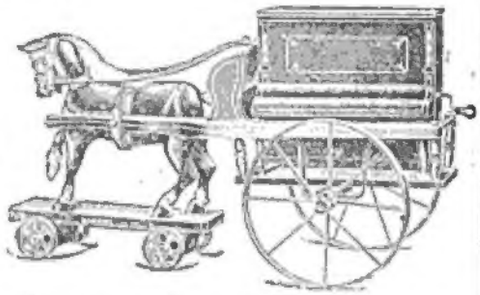
Russo-Jap War. Battleship & Gun complete with ammunition, **1/-**, postage, 4d. When hit by a Bullet the ship flies into the air and breaks up. Extra shot 6d. doz.

The Clockwork Fat Sailor, **1/-**, Postage 3d. Immense Range of Similar Figures. See Xmas Catalogue.

Gamage's Amateur Fireman, with Fire extinguishing Apparatus. Price **3/6.**



Clockwork Grasshopper **10½d.** Postage, 3d.



Gamage's New Piano Organ (as illustrated). Interchangeable unbreakable Tunes, price **21/9** complete with 6 tunes. Size, 22in. long 19½ in. high. Extra tunes 6d. each.

Digitized by Google

PLASMON

QUICK LUNCHEONS.

Plasmon Luncheon Packet,

Invaluable for Motorists, Cyclists, night work, long journeys, etc. Extremely sustaining and satisfying. A sufficient meal for three or four hours

In boxes at **6d.** each.

PLASMON, Duke Street, Grosvenor Square, W.

30/- **EASY TERMS**

Masters' "Veracity" Lever.

Made in 3 sizes, Large, Medium and Lady's size.

SEND **2/6** With Order.

With a MASTERS' "VERACITY" WATCH you have "Perfection" in TIMEKEEPING, not one day gaining or another day losing time or stopping, but 20 years' true timekeeping to one minute each month. Lever movement, jewelled, compensation balance, Dust-proof Cap, bold dial, SOLID SILVER CASES, gold hands, and we offer you to-day the most perfect Watch sold in this country for 30s. (with 3 Bonus Gifts for cash), or on easy extended payments. Send 2s. 6d. and either Gent.'s or Lady's size (Silver Keyless or Key-wind) 30s. "VERACITY" WATCH will be sent you, pay a further sum on receipt, and balance 2s. 6d. per month until 30s. is paid, and you have the Watch to wear while paying for it. 7 years' warranty. Watch Booklet free. Send 2s. 6d. to

Masters, Ltd., 367 Hope Stores, Rye, Eng'd.

SPECIAL NOTICE.

The Latest Picture of Mr. Sandow, which appeared in our issue of Jan. 19th, depicting him in a new pose, will appeal to many of our readers. As a limited number only were printed on fine art paper, suitable for framing, early application should be made in order to secure a copy to the Manager, "Sandow's Magazine," 131 Temple Chambers, London, E.C., price 6d. (post free).

All communications relating to Advertisements in "Sandow's Magazine" to be sent to the Advertisement Manager,

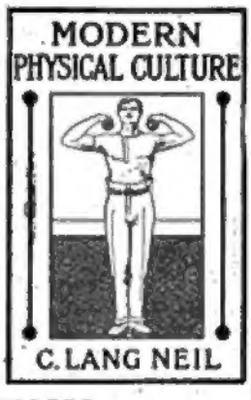
"Sandow's Magazine,"
Temple Chambers,
London, E.C.

Modern Physical Culture

By C. LANG NEIL,
Author of "Walking," etc.

Cloth, price 1s.

The Ling or Swedish System—The Macfadden System—The Vibration System—Sandow's System—Apollo's System—The Italian Hercules—Exercises with the Sandow Developer—Dumbbells—Exercises on a Horizontal Bar fixed in a Doorway—Chest Development—Curative Exercises—Drink and Liquid Foods, etc.



AT ALL BOOKSELLERS.

To the Book Publisher— **ORDER FORM.**
17 HENRIETTA ST., London, W.C. **S. M.**

Please send me a copy of "Modern Physical Culture," for which I enclose 1s. 2d.

Name .....

Address .....

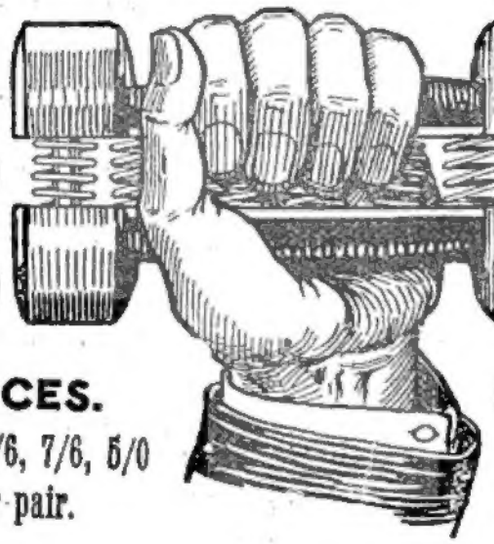
.....

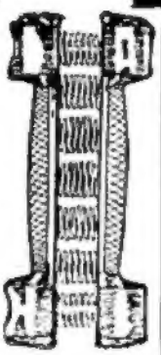
SANDOW'S

SPRING GRIP DUMB BELLS

FOR MEN & BOYS.

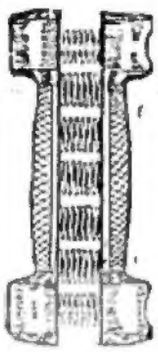
FOR LADIES & GIRLS.





PRICES.
12/6, 10/6, 7/6, 5/0
per pair.

CHART OF EXERCISES
with each pair.



THIS APPLIANCE IS VERY SIMPLE, and cannot go out of order. It consists of a Dumb-bell made in two halves, separated about 1 inch from one another, the intervening space being occupied by small steel springs, which may be of any strength, and easily removable to vary the resistance.

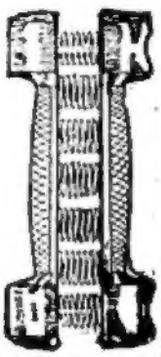
When exercising, the springs are compressed by gripping the Bells, and bringing the two halves close together, in which position they are kept until the exercise is over. They are suitable for all ages.

The pupil who possesses these Bells will find that instead of having to be continually buying heavier Dumb-bells, **One Pair will suffice him for all time.** All that it will be necessary for him to do will be to purchase, at a small expense, new springs from time to time. All pupils are advised to use the **"Grip" Dumb-Bell,** upon the merits of which I need not enlarge.

I have always taught that muscle is developed **by will-power,** not by mechanical movement, and the simple principle of this latest invention is, by calling forth a **continual Exercise of will-power, to obtain results impossible with any previous Dumb-Bell.**

Yours faithfully,

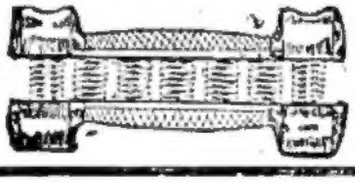
EUGEN SANDOW.

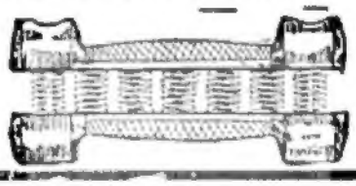


The Dumb-bells can be had from Athletic Outfitters, Sporting Goods Dealers, and Our Agents throughout the World, as well as direct from The

Sandow's Grip Dumb-bell Co.,

SANDOW HALL, SAVOY STREET, LONDON, W.C.





Digitized by Google

Do you suffer from **ANÆMIA?** Then take **Nervigorine**

Do you suffer from **BACKACHE?** Then take **Nervigorine**

Do you suffer from **BRAIN-FAG?** Then take **Nervigorine**

Do you suffer from **DEBILITY?** Then take **Nervigorine**

Do you suffer from **DECLINE?** Then take **Nervigorine**

Do you suffer from **DEPRESSION?** Then take **Nervigorine**

Do you suffer from **DYSPEPSIA?** Then take **Nervigorine**

Do you suffer from **INDIGESTION?** Then take **Nervigorine**

Do you suffer from **LASSITUDE?** Then take **Nervigorine**

Do you suffer from **MELANCHOLIA?** Then take **Nervigorine**

Do you suffer from **NERVOUSNESS?** Then take **Nervigorine**

Do you suffer from **PALPITATION?** Then take **Nervigorine**

Do you suffer from **SLEEPLESSNESS?** Then take **Nervigorine**

NO OTHER ARTICLE CAN SO RAPIDLY RESTORE A SHATTERED CONSTITUTION.

Its Action is Immediate.

In Bottles, 2/9, or by post, 3/-.

To be obtained from all Chemists, or from the Proprietors—

"The Nervigorine Syndicate," 261 & 262 Temple Chambers, Temple Avenue, London, E.C.

Digitized by Google

48, HOLBORN VIADUCT, LONDON, E.C.

Write for Catalogue No. 5.

Digitized by Google

Contents.

NOTES FROM MY NOTE-BOOK. By THE EDITOR 1
THE BLOOD AND THE CIRCULATION 3
NOT MORE—BUT BETTER—CHILDREN WANTED 4
HOW TO DEVELOP A FINE PAIR OF ARMS. By ROBERT COONEY 6
HYPNOTISM A NATURAL FORCE 7
THE MIND-VALUE OF PHYSICAL CULTURE. By ALFRED MICKLETHWAIT ... 10
ERRORS MADE BY EMPLOYES IN SEEKING ADVANCEMENT 11
THE COST OF SICKNESS. By Rev. I. J. LANSING 13
FOOD AND FEEDING 15
ENGLISH v. AMERICAN ATHLETIC METHODS: THEIR STRONG AND WEAK POINTS 18
SOME FACTORS OF MODERN BEAUTY 21
THE SENSATIONS OF STARVING 22
HAD LEGS BROKEN EIGHTEEN TIMES 22
HOW TO TRAIN FOR FOOTBALL. By AN OLD FULL-BACK 23
ADVICE TO CONSTRUCTORS OF GYMNASIUMS FOR SCHOOLS. By E. H. ARNOLD, M.D. 25
A THEORY OF MUSCULAR CONTRACTION 26
SANDOW MAGAZINE READERS' CLUB 27
QUESTIONS AND ANSWERS AND HINTS FROM SANDOW 30
THE HABIT OF HAPPINESS 31
BODILY SHRINKAGE IN OLD AGE 32
THE PHENOMENA OF HYPNOTISM 32

SANDOW'S LATEST.

BODY BUILDING.

ONE SHILLING.

Post Free, 1/3.

Address: SANDOW'S MAGAZINE Co.,
131 Temple Chambers,
Temple Avenue, London, E.C.

DELICIOUS COFFEE.

RED WHITE & BLUE

For Breakfast & after Dinner.

Digitized by Google

Ju-Jitsu and Boxing.

The Allied Arts.

JU-JITSU and BOXING

FORMS a "Real Self-Defence and Attack" system against Hooligans, Street-roughs, Burglars, Pickpockets, etc., which can be thoroughly relied upon as a most potent weapon in any emergency likely to be met with in any country, civilised or otherwise. The practice of JU-JITSU, which has made the Japanese the physical superiors of the Western people, will develop health, strength, endurance, vitality, will-power, self-confidence, and positively cure constipation, corpulency, dyspepsia, indigestion, etc.

Prof. Wm. H. Garrud will send a book (FREE), with five illustrated methods and an interesting article showing how the above system can be acquired PERSONALLY or by CORRESPONDENCE, at a very small outlay, on receipt of a penny stamp to cover postage.

THE ANGLO-JAPANESE SCHOOL,
(Dep. S.). 7, Featherstone Buildings,
Holborn, London, W.C. (Close to Chancery Lane Tube Station)

RAPHAEL TUCK'S PARTY MASKS. Something New and Startling. Assorted dozen, *2/6*. 3 dozen, *6*.
Magic Box Drawing Room Fireworks, &c., Harmless and Pretty, *1/-*

BETTER THAN EVER!
50 for 1s.
Tuck's Comic Xmas Cards.
With Envelopes, 15 Stamps Post Paid.

Send early this year and prevent disappointment.
RAPHAEL TUCK'S LOVELY XMAS CARDS.
Big Bargain Bundle with Envelopes, 15 stamps, post paid, containing 100 Tuck's Designs.
Casket La Grande.
24 Tuck's Superb Xmas Cards, 2/6 including Art Celluloids 25 for 6d, Comic Xmas Postcards, 12 for 3d, And Humorous Xmas Cards.

Tuck's Folding Designs.
40 for 1s.
CLUSTER DE LUXE.
Tuck's Folding Designs.
20 for 6d.

Raphael Tuck's folding designs with envelopes 2 stamps extra post paid.
CHOICE CLUSTER of 10 TUCK'S XMAS CARDS as a SAMPLE, 4 Stamps.
Big Box of Ten Toys for a Shilling.
TOM SMITH'S CRACKERS.
3 boxes, 1/8. Single box, 9d.
Handsome Postcard Album Gift, with 100 Pretty Picture Postcards, various views, &c., 3/6 complete, including Tuck's and Zoo. Cards.
Soldiers of the King. Complete Outfit for 2/6. Carefully packed and sent to any address.
PEARL NECKLACE, 12 Stamps. Two and Three Rows, with Bright Bars.

T.B.L., King's Premises, Savoy Corner, Strand, London.

Important Notice.

We have much pleasure in announcing to our readers that we have made special arrangements whereby we are enabled to supply

A Perfect Cast of Mr. Sandow's Arm

(Actual Size).

As only a **very limited number** have been executed, **early application** is strongly recommended for this unique model.

Price One Guinea,

SECURELY PACKED AND CARRIAGE FREE.

Apply to—
Manager, "Sandow's Magazine,"
131 Temple Chambers, Temple Avenue, London, E.C.

Sandow's Pose,

No. 29 can be had separately, printed on Fine Art Paper suitable for framing.

PRICE 3½d. Post Free.

Apply—
MANAGER, 131 Temple Chambers, E.C.

Digitized by Google

MOTTO:—*Mens Sana in Corpore Sano*—A Sound Mind in a Sound Body.

SANDOW'S MAGAZINE
— OF —
PHYSICAL CULTURE & BRITISH SPORT.

Edited by EUGEN SANDOW. Assisted by FRANK PINK

VOL. XVI. (Established 1898.) JANUARY 4TH, 1906. No. 1.

NOTICES.

ADDRESS.—131 Temple Chambers, Temple Avenue, London, E.C.

Telephone: 3436 Central.

NOTICE.—Business Letters should be addressed to the Manager, Editorial Letters to the Editor. Cheques, Money Orders, and P.O.'s should be made payable to FRANK PINK, and Crossed "London and County Bank."

PUBLISHING DAY.—Every Thursday.

SUBSCRIPTION.—Annual Subscription, 10/6: Half-year, 5/6: Quarter, 3/-

EDITORIAL.—I am always pleased to receive Contributions, Literary and Pictorial, for consideration. Where payment is desired, the Contribution should be accompanied by note of amount required. Prompt consideration will be given and an early reply forwarded.

NOTES FROM MY NOTE-BOOK.

BY THE EDITOR.

I have received the following from the writer of the letter published in "Readers' Club" in December 14th issue:—

DEAR SIR,—It gave me both surprise and pleasure to see my letter reproduced in your magazine.

I write to thank you for concealing my identity, but as you are writing the Admiralty circumstances may crop up that will require you to prove what you write before the Admiralty will take any steps to rectify the matter.

If so, I shall be pleased to give you all the assistance in my power, as I feel certain that good will come of it.

There is a circumstance that occurred a few days after sending my last letter to you:—Two men were wrestling in the forbidden ship ——————. They were stripped to the waist, and were in full swing when the commander came along. They stopped, and were about to dress, thinking he would punish them; but, instead, he said, "Oh, carry on! I like to see it." He did not stop, and they "carried on." Then along comes the petty officer in charge of the ship. He asked if they had permission to be there. They said, "No," but that the commander had seen them, and told them to "carry on." The "P.O." said, "Well, I have my orders, and must carry them out; so you must leave the ship." Now, sir, this "P.O." was simply doing his duty.

As a rule, now, we ask the officer of watch, and no one has been refused permission so far; but we have the feeling that we are intruders just the same.

Perhaps if the commander were approached in the proper manner and the matter fully explained, we should gain our point.

With many thanks for the kind and sympathetic way you received my letter, I remain, yours sincerely,

o——o

I am pleased to see that my correspondent is so far favoured as to be in contact with a commanding officer who likes to see his men indulging in exercises which go to make them better sailors. I hope that copies of this and December 14th issues will fall into his hands. I might add that on the warships of our clever allies, the Japanese, wrestling is encouraged in every way, and there is probably not a single Japanese who would be so utterly stupid as to seek to prevent the practice of any physical exercise which is calculated to fit—and not unfit—him for his pre-eminent work as a human fighting unit. It was not red tape that won Japan her recent glorious victories—it was the splendid physical condition and accompanying fearless bravery of her warriors, both on sea and land. My correspondent, it will be noticed, is willing to brave the publication of his name in the hope that it will benefit the worthy

Digitized by Google

principle involved. I will carefully see that no harm results to my correspondent for his praiseworthy attitude in a matter, the ventilation of which in these columns will, I hope, bring about a much more common-sensible condition of affairs "aboard ship" in H.M. Navy.

o——o

The Lancashire lasses are evidently quite as level-headed, in their own way, as the Lancashire lads. At Manchester a number of young ladies have banded themselves into a Physical Culture Society, the members of which have discarded the wearing of corsets. At Blackburn there is a Blackburn maidens' club, in which the members go still further. They have not only renounced the corset, they have also declared war against all their male acquaintances who indulge in the favourite weed or quaff the "flowing bowl." As the "Lancashire witches" are famous for their beauty, I expect they will work quite a reformation among the male "degenerates."

o——o

It is not an altogether uncommon thing for the pupil to end by usurping the position of the schoolmaster. I have been quite interested recently at the way Japan has been criticising English methods, and it is evident that while the wonderful little people of that country have learnt much from England, they can now give us some useful hints in return. Japan, for instance, leads the way in the important matter of early physical education while at school. It devotes a greater number of hours to physical education in the week than is given in the schools of any other country in the world.

o——o

Now, Mr. Yoshio Markini, a Japanese artist at present in this country, is telling us that our English ladies don't know how to walk. "I notice," he says, "that your English ladies are so awkward. Their arms are huddled up, their elbows are too much in evidence, the skirt is caught up untidily by one hand, throwing the whole figure out of poise." Mr. Markini also complains of a "masculineness" of the Englishwoman. Like everyone in Japan he is a strong advocate of physical culture for improving the carriage and gait, and his last word of advice to English ladies is—"Please advise all your women to learn these exercises."

o——o

It rather amuses me to find that a correspondent in the Manchester *Daily Dispatch* writes as follows:—"Youths joining the Volunteers are taught to develop into good shots, not into 'Sandow's.' There are many flat-chested Volunteers who can shoot better than the well-developed man." Therefore, of course, our regulars and auxiliary forces want "flat-chested" men. But, after all, I expect this unknown correspondent is himself one of the gallant "flat-chested" brigade. Perhaps if he sees this he will be kind enough to send me his photograph as a curiosity.

o——o

There has been quite an ebullition of feeling in the Press lately against the so-called dangers of football and its evil influences. If these critics were to level their verbal guns against the thousands who, Saturday after Saturday, sit in covered stands, watching the young gladiators at play, I could understand it. To cry down a good manly game, however, because a few young men carry it to excess, is a mental position utterly beyond my powers of comprehension. For my part, I should prefer to see more players—and less spectators.

o——o

I hope to see the experiment in scholastic Physical Culture proposed by Mr. McMillan, and financially backed by Mr. Joseph Fels, deservedly famous as a Labour Farm Colony pioneer, put into practical shape. The sooner the educational authorities decide on practical recognition of the country's physical education needs, the better for the nation mentally as well as physically—the two attributes of national health of vigour are inseparable.

Digitized by Google

The Blood and the Circulation.

THE total amount of blood in man is estimated at one-thirteenth of the body-weight, distributed as follows: One-fourth in the heart and lungs, one-fourth in the muscles, one-fourth in the liver, and one-fourth in remaining parts.

A regular supply of healthy blood is, therefore, an essential condition of life. Blood consists of numerous small corpuscles, mostly red, but a few white, floating about in an alkaline, albuminous solution of mineral salts. It also contains a substance which causes it to congeal when away from the wall of the vessel through which it flows. This can easily be seen if some blood is collected and kept assiduously stirred until cold, it will then be found that there is upon the stirrer a fibrinous-looking substance, and the blood will have lost its power of congealing. There are two kinds of blood, which are called arterial blood and venous blood. Arterial blood comes from the arteries, and is directly pumped out from the heart; it contains a large quantity of oxygen of the air, which is obtained from the lungs; it is of a bright red colour.

Venous blood comes from the veins; it has lost its oxygen, having given it to the various tissues through which it has passed, at the same time receiving from them carbonic acid gas, which it carries through the heart into the lungs, to be given off by the breath. Venous blood is purple in colour.

It is the chief office of hæmaglobin—an important constituent of the blood—to absorb oxygen from the air in the lungs, and to convey it, by means of the circulation, through the whole system, where it is detached from its vehicle of conveyance, and made to assist in the various physiological processes for which oxygen is vitally necessary, hence the difference between arterial and venous blood. In the former the hæmaglobin is highly oxydised, having a bright red colour; in the latter it has parted with the oxygen, and has lost its brilliancy, till this is renewed by further exposure to atmospheric air. An

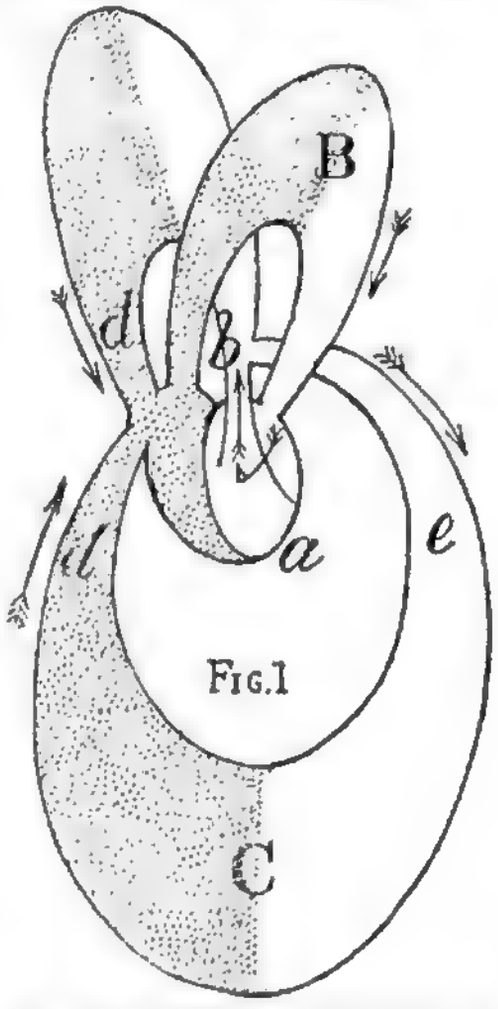


FIG. 1

Diagram illustrating the circulation of the blood—the white portion representing the arterial (red), and the shaded the venous (purple) blood. (A) heart; (B) lungs; (C) stomach; (D) liver.

essential ingredient of hæmaglobin is iron. Hence the presence of a certain quantity of iron in the blood is absolutely necessary to the healthy action of the system, and if the quantity falls short, disorders of some kind must ensue.

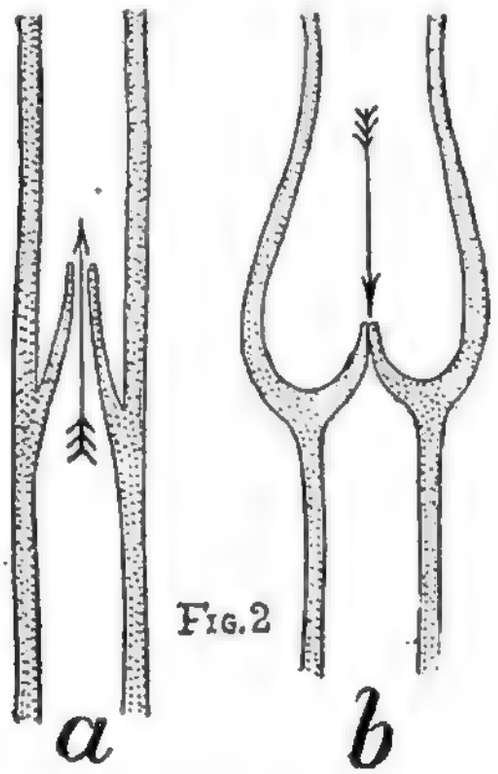


FIG. 2

Anæmic individuals are those who suffer from poverty of the blood. There is not a deficiency in amount, but it is of a poor quality, and contains too few of the red corpuscles already referred to, and too little hæmaglobin. Blood must always be moving in life, as stagnant blood soon coagulates. The heart is the great propelling power, it acts as a very powerful pump, forcing the blood into every extremity. The heart consists of four chambers—two to act upon the arterial blood, and two to act upon the venous blood.

Commencing with the blood in the upper chamber of the left side, the contraction of the heart first forces it into the lower chamber, and keeps it there by valves. The second chamber then contracts, and forces it through other valves into the main arteries, which distribute it through the smaller ones. It then diffuses through minute capillaries into the small veins, and, gradually running into larger veins, empties itself into the upper chamber of the right side of the heart. The previous process is repeated on the right side, but this time the blood passes into the lungs to exchange its gases, and then flows back into the upper chamber of the left side of the heart. Circulation is thus completed.

Not More—but Better—Children Wanted.

WE have been preached to by clergymen and lectured at by the lecturers and told how to be good mothers, and even President Roosevelt took the stand before a woman's congress to tell them how to be good mothers, says Rev. Anne Shaw in a recent address. It seems that if you women want to know how to be a good mother you must get a man to tell you.

It is about time that women should begin to lecture men on fatherhood.

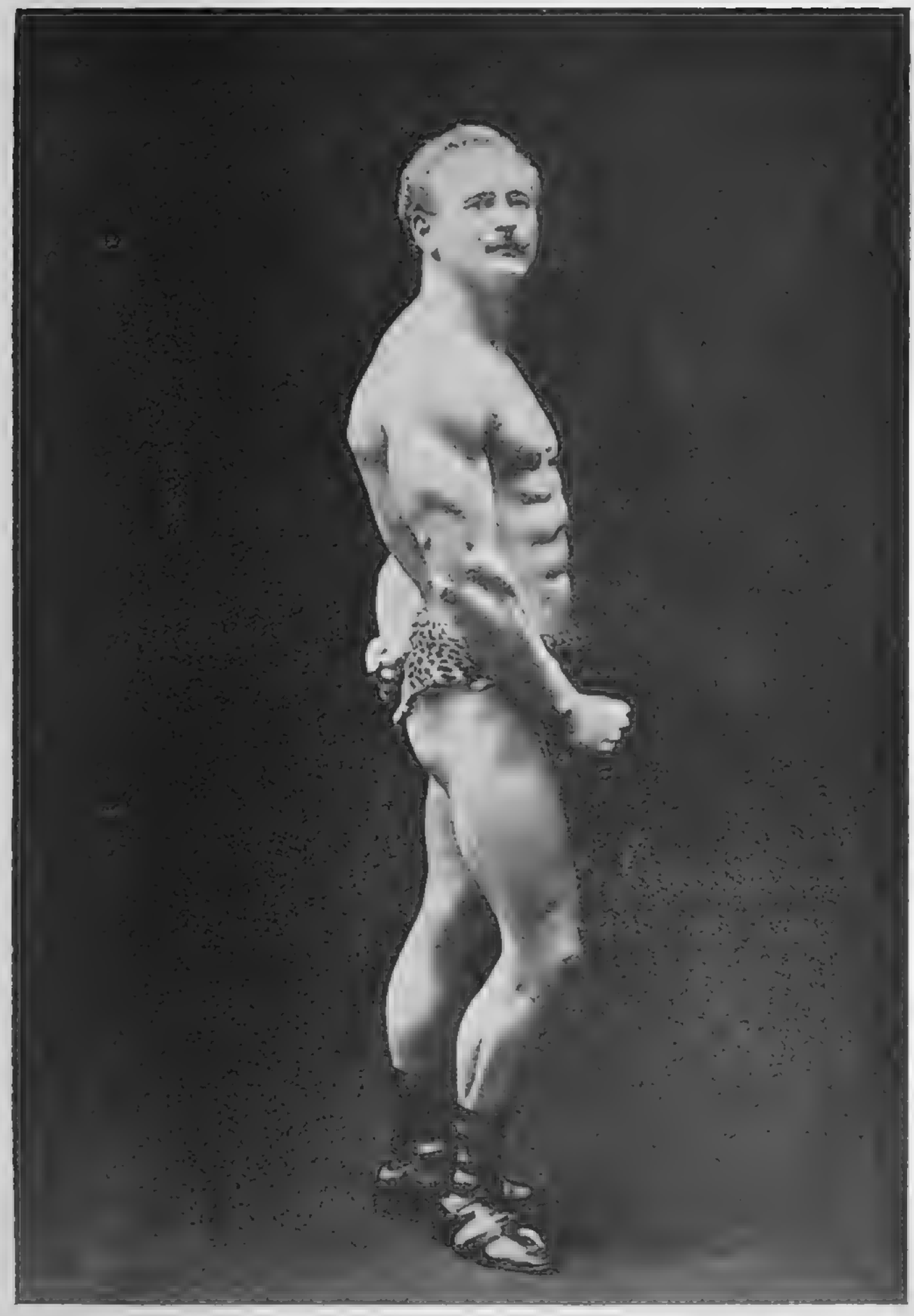
There is too much sentimental nonsense about this ideal motherhood; too much poetry. We hear too much about the hand that rocks the cradle ruling the world. It's pure nonsense. What the hand that rocks the cradle wants is power to control circumstances after the world gets out of the cradle. The hand that rocks the cradle cannot reach beyond the doorstep.

I believe in the power of fatherhood. To-day the father is lost in the producer, in the provider of material things.

Boys don't take their moral lessons from their mothers, but from their fathers. Not one boy in ten thousand wants to be like a woman. He wants to be like a man. Why does a boy take to smoking? Not because he likes it, but he will brave all the ills for the sake of looking like a man.

In these strenuous times a man often robs his children of his time and moral influence with the struggle for material things. And when he comes home he puts up before him a great wall, the evening newspaper, like the wall of China. A man may be a good provider for his children, but not a good friend to them.

We want, not more child, but better quality of child that can be brought about by a better quality of fatherhood and a better quality of motherhood.



THE EDITOR (EUGEN SANDOW)
in one of his Less Public

HOW TO DEVELOP A FINE PAIR OF ARMS.

By ROBERT COONEY.

THE following exercises, if carefully and diligently practised will in a short space of time make your arms a joy to look upon. It is not the arms alone that will benefit. The muscles of the neck are vigorously exercised, and a beautifully rounded neck, and fine poise of the head is the result. This mode of exercising the body should appeal forcibly to all classes, especially to our poorer brethren, on account of its inexpensiveness. All that is required to give you the arm of a Sandow and the grip of a Vansart, is an ordinary chair used in the manner which I shall point out. Select a very light chair to start with; as your strength increases you can get a heavier one. The exercises can be gone through in the privacy of your bedroom before retiring for the night.

Exercise 1. Grip the chair firmly by the near legs with both hands. Now bend the wrists *outwards* as far as possible; then back to original position, which we shall call "attention." This to be done about six times, but no stringent rules can be laid down as regards this, as all depends on the strength of the people following out these instructions.

Exercise 2. Catch chair as for first exercise, but instead of bending the wrists outward, turn them first to the right and then to the left. This movement will be found a little difficult at first, but as you get used to handling the chair all this trouble will disappear. This exercise is particularly useful for strengthening the wrist, part not used half enough by the majority of muscle-seekers. Pay particular attention to this.

Exercise 3. Grip chair as in preceding exercise. Bring the chair slowly in towards the face, inclining it slightly towards the right shoulder, and, using the wrists as much as possible, keeping the muscles tense, allow the chair to fall easily down behind the back, until it rests lightly on the rump. Then slowly back to attention again. Repeat until a feeling of tiredness is felt. By this expression I don't mean you to keep on till the exercise becomes irksome. The time to stop is when you become *conscious*, as it were, of the existence of any certain muscle. When you feel like this *lower the chair immediately* to the ground, and massage the part or parts affected. The palm of the hand rubbed vigorously over the complaining muscle will suffice for this.

Exercise 4. Grip chair firmly by the old legs. Then bend the wrists slowly outwards, stopping when an horizontal position has been reached. This is a very valuable exercise for development of the shoulder muscles.

Exercise 5. Attention. Push the right hand out from the body, and bring the left inwards. When pushing the right hand out resist slowly with the left, but gradually give way. Reverse the movement; pushing with left and resisting with right.

Exercise 6. Place chair on the floor, back towards you. Stoop quickly and firmly grip the rung, with the knuckles turned up, and rise to an upright position. As you rise push the chair out till held straight in front. Lower again to floor and repeat. The legs are used extensively in this movement, and benefit greatly. A variation of this may be effected by gripping chair with the knuckles turned down. Especially useful for developing a very powerful grip.

Exercise 7. Place chair on the floor. Stand upright with your face to chair, hands at sides. Swing sharply round so that you have your back to the chair. Take two paces forward; then slowly stoop till you assume a crouching posture; then allow the body to sink gradually till you are finally lying flat on the floor. Extend the arms over the head till they grip the chair by the rung. Now raise it slowly and bring it out towards the feet, keeping this position for a

second or two until ready for the next move. Rise to a sitting position, and finally stand quickly upright with chair outstretched in front. This will be found fairly difficult at first, but "Frequent practice will perfection gain." As the pupil progresses it is better to make one continuous movement of this. Practically every muscle in the body is used.

I have now given the pupil a good grounding in chair-exercising, and he should be able to perform the movements fairly easily. He will be able to invent exercises of his own in time, as the ones I have suggested will in their turn suggest others to the observant student. He will then have built up for himself a simple, pleasant mode of exercise.

IN addition to the ability to give strict attention, to concentrate your mind upon any given thing, and to act promptly, intelligently, and forcefully you must have the ability to WILL to do the thing in mind in such a way as to produce an electrical or magnetic influence or wave along the lines of effort that you desire to accomplish.

Don't get frightened: This is easy if you will just understand what is meant. Nothing difficult at all. Just notice.

When you meet a friend who is smiling pleasantly, who speaks cheerfully, and whose actions denote good nature and friendliness, you at once feel the disposition to be cheerful and happy yourself. You feel happier and better.

Carrying this idea a little farther, you can even make a person who may be cast down and discouraged cheer up and look and feel different.

It is said by scientists, and I believe it to be true, that the very thoughts and feelings that you entertain toward another engender or cause similar feelings and thoughts by that person towards yourself.

This is mind influence, and when properly and powerfully directed it becomes what we call hypnotism. There is no need to make this difficult to understand for it is simple and easy.

For example, the air is all around you.

Wave a fan and you put a portion of it in motion. If you wave it vigorously you can make a breeze.

Now there are several things or elements in the air.

There is moisture.

There is light.

There is heat.

There is electricity, and—

There is something that we do not understand very well; we call it ether.

This ether has long been thought to be the connecting medium on which several different kinds of influences or phenomena are carried or transmitted from point to point or from one particle of matter to another.

Mind seems to be all powerful.

When you think, something happens.

You place any person on a balance so that the body is perfectly level and then have him think about something and his head will go down. This shows that when he thinks his brain or head gets heavier; this proves that something has been changed.

If it changes things for that person, some change has taken place in the air

or other that is surrounding him, and this in some measure and to some degree changes the conditions or influences, his relations if you please, with and to those who may be about him.

The thought which he has promulgated, or caused to exist, produced motion—it moved his head, this, be it ever so slightly, moved the air, and this that you have seen is only a small portion of what has really taken place; other things have happened at the same time.

I am not going to try to explain all of them, for I do not claim to know all about them, but I am giving you the facts in regard to what I do know.

It does not make any particular difference whether what we call mind is all one big mind or whether there is a multitude of minds all connected in some way; what we are trying to get at is the fact that one mind is connected with, or to, other minds, and thoughts that one person thinks can, and do, affect and influence other minds, and the wonderful part of Hypnotism is that the skilful operator can exert that influence, particularly on any one mind that he chooses, just the same as he could walk up to that person and hit him with his fist. In other words, he can direct the force of his mind in the direction that he chooses, and toward the person that he wishes to influence.

The good doctor's influence is all in the direction of *Health*; he thinks health, he talks health, he works to make you well, and he is in dead earnest. You will notice that he always tries to make you think there is not really very much the matter; that you will soon be all right again.

It does not just happen; he does this for a purpose. He knows that if he can get your mind to working along the right direction, the good influences of whatever advice he may give you, or whatever medicines he may use, will be greatly increased, and you will get well that much quicker.

I mention this again so as to impress upon your minds the fact that your mind and what you think have a very important part to play in making you well, and also to show you just how the doctor tries to help you to think health thoughts.

It is the strong mind helping the weaker mind, just as the strong arm would help the weak arm in case of necessity.

Now, I want to give you a good health suggestion: When you see that the doctor is trying to help you in this way, you should do everything you can to help him, and thus help yourself. If he tries to make you smile and be cheerful, that is the proper thing for you to do. If he tries to cheer you up and make you laugh, fall right in with his idea and have a good time, for there are many well-authenticated instances where a hearty laugh has been the turning point in serious cases of illness.

What you want is to get well—then do not be contrary, don't hold back, but be willing; put your mind in harmony with his mind, as nearly as you can, and the glad, happy music of the spheres will reward your effort; sunshine and gladness will take the place of doubt, sorrow, and suffering.

Remember that, at the most, "Medicines are merely little helps"—to assist Nature back into control and bring about a healthy condition in which the body is comfortable and the mind at ease.

The hardest person in the world to do anything for is the person who will not try to do anything for himself, and who will not assist others, even when they are trying to be of service to him.

This holds good in matters of health as well as along material lines. "God helps him who helps himself," is as true here as in any other line of endeavour.

When people are well no effort, seemingly, is required; but when a person is ill, intelligent, persistent effort is necessary, and the patient should cultivate a disposition to be well and to work harmoniously with those who are trying to assist him. For, "As a man thinketh, so is he."

If he thinks that he is getting well, the chances are ten to one that the influences will all be in that direction.

If he cultivates the desire to be well, and also the disposition to do everything that he possibly can to further the efforts of the doctor, the forces that tend toward his recovery are more than doubled.

Nature intended that you should be strong and healthy; consequently, all the Nature, or Natural, forces exert their influences in the direction of health. For this reason, when the doctor comes smilingly and cheerfully into your presence and suggests health, everything in nature and science begins at once to harmonise with his effort to make you really well.

It then becomes your duty to make every effort to do what good you can, to assist or help along these good influences, and every word, thought, and deed should be in harmony with the idea of health and cheerful helping.

The mighty minds of the mighty men of the past have been the means of accomplishing the mighty deeds that emblazon the pages of history, but there have been equally as remarkable, interesting and valuable things done by the little old doctor, away out in the country, which have never been mentioned, and the only reward for which has been the approval of a clear conscience, the thankful, appreciative remembrance of a restored sufferer, and the "Well done, good and faithful servant," which the good physician can carry in his heart through life.

These things make strong, and give a fearlessness and ability whose influences are felt wherever his services are needed, a something that makes you stop and look as you see him move around.

You do not perhaps know what it is, but you will agree with me that it is there, and I say to you that it is refined, purified, active, hypnotic power.

There is upon Life's hand a magic ring—
The ring of faith-in-good, life's gold of gold;
Remove it not, lest all life's charm take wing;
Remove it not, lest straightway you behold
Life's cheek fall in, and every earthly thing
Grow all at once unutterably old.

—EUGENE LEE HAMILTON.

Do not waste a single hour doing the thing you dislike to do, living in an environment distasteful to you, or associating with people for whom you have no affinity. You have just one life to live, and every day of it is important. Choose your life, don't stupidly submit to Blind Fate's decrees. The day has long since gone by for heroically enduring that which seems to be one's destiny.

It's wonderful how quickly a breath of country air can brush away the cobwebs of vexation.

MISS ANNETTE KELLERMANN
("*The Australian Mermaid*").

A most interesting illustrated interview of this lady by Mr. J. St. A. Jewell was published in issue dated December 21st.

(*Photo shows Miss Kellermann just before essaying the difficult task of swimming the English Channel.*)

No man doth safely rule, but he that hath learned gladly to obey.—THOMAS A. KEMPIS.

By the street of "Bye and Bye" one arrives at the house of "Never."—ARCHBISHOP TRENCH.

The Mind-Value of Physical Culture.

[By Alfred Micklethwait.

THE good effects of what was termed the Physical Culture "craze" which set in a few years ago are already apparent throughout our land. They are to be found in the improved bearing, the deepened chest, the broadened shoulders, and the general physical betterment of the people at large.

That our youths are actually improving in these respects was shown strikingly to the present writer during the recent summer. The heat rendered it advisable for him to visit the public swimming baths in whatever part of the country he happened to be, and opportunity was thus afforded for observing over a wide area the development of many who do not ordinarily resort to places where such observation is possible. It was apparent that whether at home or in organised schools the work of Physical Culture was being carried on to the undoubted betterment of national physique.

These results are open to be noted by any who care to use their eyes. What is often overlooked, however, is the fact that hand-in-hand with physical development must go a strengthening of moral tone and a broadening of intellectual grasp. The question is resolved not merely into an endeavour to increase the all-round measurement of the body, but becomes ennobled by the efforts of will that must be put forward if success is to be attained.

Every ounce of work used in a physical exercise will, if properly placed, go to the creation of intellectual force as well as to the building of muscle. The close concentration demanded here serves well in other departments of life, to all seeming far removed from connection with physical action. It is a truism that those first in the playing-fields are often first in the examination hall—many of the qualities requisite for success in athletics and in scholarship being the same. Again, while undergoing physical training one's life is simpler in the matter of diet and pleasure, and the thought-plane of the man under such control is immeasurably higher.

If universal history affirms one truth, it teaches how dependent is a nation's greatness upon the manliness of its men, the sweet womanliness of its women, and the general physical and moral standard of all. On a base of severe self-denial and Spartan simplicity of life Greece rose from the Ægean as a world-power, in the moment of her completest self-control produced those great philosophers whose works shall live so long as the world endures; yet with the effeminacy of her warriors and the corruption of her matrons subsided from consequence among the nations to be held in subjection as a slave.

To the west Rome then became a hardy conqueror and the mouthpiece of a noble literature, but in turn sank under a shameless debauchery, and was swept away by the invading of Goths and Huns. And to-day England must find one of her chief sources of hope for the future in the increasing attention that is being paid to the care and culture of the body.

Without exaggerating the influence of the movement, and notwithstanding the terrible social evils which still fester in our midst, it is a safe assertion that, within the past ten years, the average young person has undergone a remarkable improvement, both in a physical and mental sense. All honour to the leaders who battled through an early disfavour and endured the scorn which set them down as "faddist." Let those who esteem the devotee of Physical Culture a mindless creature occupied in mere animal glorification, mark well the quickening of mental power and the steadying of moral tone which invariably accompany a well-considered course of exercise. Often it occurs that one to whom reading was previously an absolute trial becomes interested in the literature of Physical Culture, and from this start is impelled to the study of the great masters of our language. After all, the best testimony to the mind-value of Physical Culture lies in the physical culturist himself. He stands as witness with a cleaner thought and healthier imagination, an increased mental stamina, and, what is to some a clinching argument, a higher business capacity.

Errors made by Employes in Seeking Advancement.

I HAVE sometimes watched a big, strong nervous horse standing perfectly safe, as left by his owner, with only his bridle dropped over his head, or, at best, tied to a weight that he could draw away with the slightest effort; and yet he thought he was tied hard and fast and never offered to move. Should the horse make up his mind to start down the street, he would be surprised to find little resistance. He would be astonished that he had been held back by an idea.

And this is just the condition of a large number of employés, especially those who are not satisfied with their present positions, and yet feel themselves tied down by circumstances and unable to make a change. Should they attempt to break loose they would be ashamed at discovering how slight were the ties that bound them.

An employé makes a mistake to stay on in a position after he has come to feel dependent upon it; to think that there is nothing else he could do, and that should he lose his present position he would not readily get another one. This attitude of mind is evidence of cessation of growth and development. It is the danger signal, telling him to wake up and make a change. A man must always command his position, not let his position command him. When he clings helplessly to it, as if it were the only means of support, he is in a bad way. He must all the time be greater than his position. He must grow, that the value of his service may constantly increase.

MUST FIT INTO EVERY CORNER.

There is much talk about the futility of trying to fit square pegs into round holes and round pegs into square holes, but in reality the employés who become of the highest value to their firms are neither square pegs nor round ones; they are plastic and can become many sided. They fit into every groove and corner; they follow the trend of the business; they are like molten metal poured into a mould. They are the men who can meet emergencies, who are equal to the demands, who are versatile, able to turn their attention, with profit, to more than the mere routine of their official duties.

Every man in every position has his "chance." The fact that he has the position and dozens of others would like to have it is proof that he has a "chance" beyond others.

The business world is like a great arena for the running of races. Many come and apply for tickets which will give them the privilege of running. Those who receive their tickets are entered at once; the others hang back waiting their "chance." No matter what their running ability, they cannot prove it till they get on the track. And once on the track, the kind of stuff of which they are made will determine the outcome.

When a man is given employment he has received his ticket and been duly entered. The kind of a race he is to run depends wholly on himself, on his degree of preparation, and his determination. If he is a "quitter" he will be lost in the crowd. If he goes in to win he will be heard from.

FINE ART TO BE A SUCCESSFUL EMPLOYE.

It is a fine art to be a successful employé. It means to be capable of carrying out the will of another man with the personal interest and clear insight that one would use in handling his own business.

An employé makes a great mistake when he imagines he knows more than his employer. He may about some matters, but his general business judgment cannot be so good, or else why isn't he an employer instead of an employé? The fact that the other man is

in a position to hire him to do his work is proof—lacking the accident of inheritance—of the other man's superiority—in some vital direction. A great deal of credit is due to the employer for establishing a concern which will give others who are less enterprising an opportunity to earn a living. Often in cases where employés consider themselves infinitely superior to those who employ them, they should not acknowledge it, because, with all their superiority of birth, education, and breeding, if they could not win out against the other man's sheer determination and pluck, it does not speak well for them. A superior man in an inferior position is evidence of decided weakness in some direction. Let his humility over his failure to take his right place in the world keep back all foolish pride in the fact that through the abilities of others, not himself, he is better educated than those whose abilities have put them over him.

An employé makes a great mistake to talk freely of his position, his employer, or details of his business to others, especially in public places, such as restaurants or street cars. He may not directly injure his firm by his idle prattlings, but he gives an impression of decidedly poor business judgment. No employer will take a man into confidential relations with him who is known to be a free talker of what should be considered his private affairs. Other men realise at once that a man who discusses his business in detail freely and publicly is really not in a responsible position.

QUIT WHEN ADVANCEMENT STOPS.

An employé makes a great mistake to remain in a position in which he sees no opportunity for advancement. He'd better make a change and begin low down in another line where there is an opportunity to climb.

Several years ago, a young man, 20 years old, began to work in a large city department store. He worked for several months and saw he was not getting ahead. He went to his employer and told him he was not satisfied.

"What's the trouble?" asked the employer.

"I want to be put where I can work up," said the young man, mentioning a department to which he wished to be transferred.

"You'll have to go in on 16s. a week."

"All right, a start is all I want," answered the clear-headed youth. And to-day, four years from the time he got his "start," he is city buyer for the same firm, and one of the largest salaried employés in the house.

An employé makes a big mistake when he fails to win the confidence of his employers. Confidence is the strongest connecting link between employer and employed, between firm and customer. Every business house recognises the value of establishing confidence among its customers, and works to this end continually.

ESTABLISHED CONFIDENCE LIVES LONG.

Once get the confidence of a man and it is with difficulty that it can be shaken. Get into the confidence of your employer, make him feel that you are to be trusted, that you are reliable and safe, and you are sure of advancement.

It is a great mistake to try to get the best of an employer or to attempt to take advantage of inside knowledge of affairs. Many times an employé gets the idea that he is indispensable to the firm, and can on this ground demand pay his actual services do not warrant. A young man lost a most valuable position because in a critical moment in his firm's history he demanded a higher salary, on the plea that they could not manage without him.

Critical times are the times that try the mettle of employés, and one who is wise will not take advantage of the moment of weakness. He will act the man in business, and if his employer is also a man, the employé will receive his reward. If the employer is not a true man, then this test will have shown him in his real light, and the quicker his employés seek other fields the better for them.

Honesty is not only the best policy, but the only one through which a concern can become firmly established, and an employé makes a mistake to waste his time becoming one of the pillars of a structure that is shaky.

THE COST OF SICKNESS. By Rev. I. J. Lansing.

SICKNESS is very expensive. It costs far more than health, and the returns from it are not large. Vice only is more costly than ill-health. The direct cost is almost incalculable. This can be estimated if we think what is expended for physicians, nurses, medicines of all kinds, hospitals, and the like. Of reputable physicians we cannot speak but in terms of praise. They are, no doubt, needed under present conditions, but those conditions are results of removable causes. In many communities there is a physician to each five hundred inhabitants. Oftentimes the proportion is larger than this. Drug stores, which deal principally in medicines, are among the most numerous of shops, and the price of the medicine sold on doctors' prescriptions is a very large sum in the aggregate. Of patent medicines, not a few of which cannot but be highly injurious, the sale is enormous. Individual brands of such medicines, so called, have made fortunes of thousands of pounds for their proprietors. Some of these are said to expend tens of thousands of pounds annually for advertising alone. All this the sick people pay in the vain hope of finding a cure for their ills. And there is a great army of nurses, who are indispensable to communities in the prevalent conditions of sickness. The services of these command a large return in money.

But while the expenses of sickness directly connected with doctors and medicines are enormous, the indirect cost to its subjects is far greater. Think of the undone work and unearned wages of the sick; of the loss of economic values where a person can earn nothing, but must be an expense on the earnings of others for months and years together; of the early deaths of those who, in dying, take from human society just so much wealth-earning capacity; of the half-sick, who never have a maximum of energy, and cannot, therefore, accomplish more than a fraction of the work which they would do if well. Beyond question, the loss from such destruction of earning ability must, in this country, amount to untold millions of pounds annually.

But this is by no means all of the manifest loss. Hundreds of thousands of people are handicapped all their lives from birth by a weak constitution, inherited from unhealthy parents, which weakness diminishes by a large fraction their physical and intellectual force and earning capacity. We do not say that they cannot gain the health to which they are entitled, and, we might add, to which society in them is entitled, but the fact is that they do not do so. Worse than this is the loss of happiness, of which, in a condition of normal health, all these would be possessed, and with this buoyancy of feeling the power of the intellectual and spiritual life which would naturally accompany it. How many excellent people are always excusing themselves for what they do not do and dare not attempt on the ground of ill-health. They are willing, but they are without the force of life to do it. Initiative and independence are more likely to be manifested in those who have good health, and these are the qualities most usually missed from the life of men.

When we regard the general wealth and happiness of society and wish it were more, when we regret the wastes and burdens which make so many poor, it is fitting that we should remember how much of this is due to the preventible sickness and weakness. Health is worth having, even from the financial standpoint, and from this same point of view we cannot afford to be sick. We do not pretend to say that there are not some redeeming features of the situation. The sick draw out the tender concern and care of the strong, and also by patience attain exalted character in many instances. But no one need be sick in order that these excellences may grow. There are other and better ways of realising these ends.

We must believe also that the world of thought is impoverished through the lack of those health and normal views of things which is quite likely to be associated with illness. It is perfectly well

known that our thinking is conditioned to some degree upon our health. A great deal of brooding and self-consciousness is the consequence of pains and weaknesses, which call one's attention inward to himself. Ardent, urgent thought upon the exalted subjects of observation, which God has placed before us in Nature and society, is not likely to be associated with vitality. The whole tone of the intellectual life of society would be manifestly improved by an increase in the general health. And no less is it true that much of the morbid feeling which we must continually combat, and against which we must strive in any community, has a close relation to morbid physical conditions which could not exist in sound and vigorous bodies.

Reflection upon these plain facts cannot but make it apparent to every person that health is valuable in economic ways. Many a career has become pitiful only because the person has broken down in health. A vigorous physical habit as a resource of a right heart and a sound mind is one of the pillars of fortune. Health for happiness and for service is a good so great that he who possesses it may be said truly to be endowed and armed for triumph. We wonder, then, that so few are willing to give the body that care which will make it the agent of all the higher powers for the accomplishment of the largest success of life. It is worth the care.

This they often feel who are struggling back to the health which they have carelessly lost, and this they know who have the unspeakable delights which are the accompaniments of good health.

EXTRACT FROM SMITH'S LETTER TO A FRIEND: *"I haven't been using my dumb-bells much of late. . . . Find I can get all the exercise I want without them."*

An American Champion a Professional.

Through the action of the A.A.U. Record Committee, Arthur F. Duffey's records in sprinting have been expunged at a special meeting on November 18 of the governing board, these records "having been made upon the assumption that he was an amateur." The A.A.U. at the annual meeting, November 20th, officially confirmed this move.

This action displaces the following records:

40 yards—4 3-5 s.
50 yards—5 2-5 s.
60 yards—6 2-5 s.
100 yards—9 3-5 s.

The only championship of America won in 1899, when Duffey beat Kraenzlein, is also erased.

While in every instance above mentioned, with the exception of the 100-yard dash, Duffey held the records jointly with others, the 100-yards mark of 9 3-5 s. stood in a class by itself.

The action of the A.A.U. governing board was taken because of Duffey's public admission of professionalism in a printed magazine article. Chairman Sullivan of the A.A.U. Record Committee pronounces this admission "the most startling confession ever made in athletics."

Health dwells amid the sun-kissed hills,
And by the smiling sea;
Her maidens are the laughing rills,
Her pages wild and free.
The shifting winds that bear her train
Of fragrant wildwood flowers
When skies are blue or mild with rain,
Health rules the morning hours.
Go seek her while birds are gay
And sing from every bough;
A cooling hand she longs to lay,
Upon your fevered brow,
Refreshing is the cup she holds,
That tasting you may glean
The joys that rosy Dawn unfolds,
When Health is ruling queen.

—RUTH RAYMOND.

MISS KELLERMANN TAKING FOOD WHILE IN THE WATER.

FOOD AND FEEDING.

All Food in excess of the actual requirements of the Body is a Source of Weakness and Disease.

THE late Sir Henry Thompson, in the interesting volume upon "Food and Feeding," which has now passed through many editions, was among the first to insist forcibly upon the fact that the amount of food consumed should be much diminished in advancing life; and Professor Clifford Allbutt has lately written to the *Times*, on his return from a tour in America, to say that wholly new ideas about diet are beginning to prevail there, and that American men of science have obtained demonstration of the fact that all food in excess of the actual requirements of the body is a source of weakness instead of a source of strength; nervous force which might be better employed being consumed in its partial digestion and in its ultimate removal from the system. He tells us that this is especially true of nitrogenous material, while hydro-carbons can be burnt off in respiration with comparative facility. It would almost seem as if after an enormous meal of pork chops, and from no other discoverable cause than gastric distension by Nature, in attaching pleasure to the consumption of food, had carried her precautions against starvation to excess, and had ignored the risks incidental to repletion. An inquest was held a week or two since upon an omnibus driver who died suddenly due to the action of food and flatulence which arrested the action of a feeble heart.

"A considerable amount of evidence has lately been brought forward from one source and another tending with remarkable uniformity to show that the human body can be maintained in full vigour and activity upon a much smaller amount of food than is usually consumed, and the question is one which calls for the serious

attention of physicians and of physiologists. It has, unfortunately, been very much left, up to the present time, in the hands of minorities, who may, without gross exaggeration, be described as faddists, and hence is has not received the consideration due to its manifest importance.

The question of the kind of the food consumed is, however, a different one from the question of quantity; and our present object is to suggest that the majority of people eat a great deal too much, and fall short of their highest attainable standard of mental and bodily activity in consequence. There must obviously be a limit to the needs of the body, and when the supply exceeds this limit it must obviously be removed or disposed of in some way. It can scarcely be doubted that the American view quoted by Professor Clifford Allbutt is essentially correct, and that the disposal of the superfluity is a tax upon the organism by which it is effected. It is at least not doubtful that the period of gorging, of which the Dickens era was perhaps the termination, was also a period of premature disease among the well-to-do, or that a great increase of longevity has been a characteristic of more recent times. Fifty years ago an octogenarian able to take part in the activities of life was at least regarded as a remarkable exception to the common rule; to-day, this position could hardly be sustained.

The bulk of us are so civilised that no greater departure from a natural animal existence can be imagined than that which falls to the lot of workers in great centres of industry. Thus it happens that while the robust countryman may cry down all these new-fangled teachings as mere idle fancies, and point with assurance to himself and his lucky partners in outdoor living, whether beast or man, as evidence of their futility, the medical profession remains painfully aware that the analogy is false. So unnatural to the human animal is the almost exclusively indoor life of the office and works that the victims of it become a law unto themselves.

Under the alluring title "Is man poltophagic, or psomophagic?" Mr. Hubert Higgins, in *The Lancet*, introduces us to two apparently distinct varieties of deglutition. Tracing back to the Greek origins he demonstrates that a poltophagic animal is one that swallows its food in a pultaceous condition, while a psomophagic creature disposes of its meal in large fragments. The question at issue is, therefore, whether man in a general way of speaking masticates his food as much as he should. Some years ago Mr. Horace Fletcher and Mr. E. H. van Someren conducted an investigation into the subject upon which Sir Michael Foster reported as follows: "The adoption of the habit of thorough insalivation of food was found, in a consensus of opinion, to have an immediate and very striking effect upon appetite, making this more discriminating and leading to the choice of a more simple dietary, and, in particular, reducing the craving for flesh food. The appetite, too, is beyond all question fully satisfied with a dietary which had a total considerably less in amount than, with ordinary habits, is demanded." There is thus a *prima facie* case for consideration of the relative merits of the two methods of eating.

It appears that the pharyngeal anatomy of the poltophagic is different from that of the psomophagic varieties of animal. For instance, the horse, which may be regarded as poltophagist, has a soft palate which is thick and muscular, and extends centrally well down in front of the large and rounded epiglottis. This arrangement is, of course, well adapted to the swallowing of the long, fusiform, semi-solid masses with which it is called upon to deal. How closely the soft palate is related to the tongue and epiglottis in the horse is shown by the inability of this animal to breathe through its mouth. The dog, on the other hand, is a type of the psomophagist.

Mr. Higgins holds that man is a poltophagist. To illustrate the poltophagic method of mastication and deglutition he traces the course of a piece of currant cake. After a small amount of

mastication has taken place the following is the sequence of events:—

"As the starch is converted into dextrose it is dissolved by the saliva. From time to time samples of the fluid contents of the anterior buccal cavity are withdrawn (by the action of the soft palate and tongue) into the buccal passage, where it passes on to the posterior buccal cavity. When sufficient has collected a swallowing impulse is excited. . . . When the process of mastication and deglutition is completed there is nothing left but some almost dry currant skins and stones."

It is claimed that by the establishment of poltophagic habits of eating the appetite becomes well defined at the commencement of a meal, and ceases definitely at the end; that is to say, there is no unholy hankering after nuts and wine or preserved fruits; there is marked increase in the pleasure of eating, the taste for simple food becomes pronounced, and preferences for particular chemical elements of the simple dietary are more defined; the fæces are lessened in amount and become odourless; the large intestine becomes smaller, and the fæces tend to remain longer in the bowel. "In all cases it can be said that there is an extraordinary change in the general health, much more joy of living, increased power of work, and freedom from the infinitely troublesome concomitants of chronic illness."

"FOOTBALL ON THE BRAIN."—Mr. John Burns, M.P., in distributing prizes at the Gideon-road County School, Battersea, the other day, made a protest against undue fondness for sport, which is leading to what he called "football on the brain." "We are all fond of sport," said Mr. Burns to the boys, "but sport is being overdone. I am fond of cricket and football, and each in its proper proportion and amount is excellent. But there are some who dream of nothing else but football, and whose heads will ultimately become shaped like the sphere in which they delight, because they have no other ideal in life. There are some men in England," he continued, "who have football on the brain. These were cultivating the wrong end of their anatomy—their feet instead of their heads. He wished them to regard sport as a means to an end—a physical exercise, a stimulus to make them strong for the after-work of life. They wanted sportsmen, not gladiators; athletes, not professionals; recreation, not brutality."

This is the Way to Get There.

Don't slouch along as if you were on your uppers. Show by your carriage that you are worth considering. Step lively, please. Don't slouch.

Never allow your physical standard to drop. Walk as if you were going to do something in this world.

Don't shuffle along like the failures we see sitting around on the benches in the parks, or lolling along the pavements with their hands in their pockets.

Don't give people the impression that you are discouraged. The man who thoroughly believes in himself walks with his head up, his chin in, his shoulders back, his chest out. And he gets there with both feet, unless he has only one leg.

Stand erect. Be a man. Maybe you are a woman, but be a man anyhow. Don't slouch. You cannot aspire to accomplish great and noble deeds if you assume the gait of a tramp. That gate is rusty on its hinges and won't work. You were created to walk upright. Put character, energy, strength and rustle into your walk.

Saving the Hair.

The possible loss of hair is a source of solicitude to a woman during a protracted illness, for every woman appreciates the fact that her long hair is a glory to her. Very often, however, any attempt to prevent this loss depends altogether upon the willingness of the nurse.

The falling of the hair after typhoid fever and other febrile diseases is a result of prolonged malnutrition, which profoundly affects the skin. Ordinarily, the general surface of the body is bathed more or less thoroughly every day; but the scalp, as a rule, is carefully protected from the water. The patient is thus deprived of a most exhilarating part of the bath, and the roots of the hair are permitted to lose their vitality.

The proper care of the scalp embraces shampooing, massage, hot and cold douches, and the customary coiffure. Shampooing must be practised once in two or three weeks.

ENGLISH *v.* AMERICAN ATHLETIC METHODS;

Their Strong and Weak Points.

ATHLETICS practised in a dilatory manner are not of much use as a mental and bodily training, and it is only when they are raised to the pitch of arts—and a careful study of method is required from the athlete—that they evoke the qualities of perseverance and thoroughness, necessary possessions at all times.

A subservience to discipline is the part to which English athletes are averse, says "Cambridge Blue" in *The Field*—discipline in the actual practice of their feats. Their plea is that if athletics are to be made anything but the means of exercise, they cease to be recreative. This argument is not without force, but a further plea of theirs is that athletics as practised in England not only afford more pleasure to the participants than the system obtaining in America, but that if the novice is placed under strict supervision and systematic instruction, a professional instinct is created, which is demoralising to him both then and in after life. Another argument is that the American university athletes give much greater time to their games than we. This last idea has taken root in consequence of the perfectly trained condition of the members of the Harvard and Yale team which opposes Oxford and Cambridge. The appearance of the American athletes is decidedly in favour of this supposition.

The facts of the case, however, are that attention has been paid by them to the science of athletics, and it is when this is recognised that we see the finished athlete. Expenditure of time is no factor here. The average Cambridge athlete spends quite as much time in his pursuit of athletics as his cousin at the American Cambridge, Harvard, but in the vital point of method he is very deficient. In what may be called the purely natural branch of athletics, that is, running, as long as a man keeps in fair bodily condition, skill is almost non-existent, from the fact that one is naturally either a good runner or a bad runner, and no amount of instruction will make bad into good. If left to himself, a runner, with practice, will soon reach his best form. But this does not apply in the jumping, hurdling, and weight-propelling events. In all of these there is a certain underlying science to be mastered, and if this is not done at the outset, a man may go on indefinitely without getting much out of himself in the way of good performances, and never know what it is to have the feeling of satisfaction which comes from the knowledge of how to master his feat. In most cases he will also spend much more time in actual practice than is necessary.

Can there be any question which is the true conception of athletics? Should they be practised in an intelligent and scientific manner or be used merely as a means of passing time? A spirit of resolution to acquire the skilled forms of athletics is what is wanted in England to-day, and until this is done we can hope neither to emerge from team matches satisfactorily, nor to obtain much benefit from our exercises. An inherent constituent of the American character is the desire to do a thing well if it is worth doing at all. They apply this spirit to athletic exercises, and it has the effect of raising them from mere physical exhibitions to the pitch of cultivated physical arts. Whilst practising they give their whole mind to the subject and attain their object by a mastery of their art.

At Oxford or Cambridge, when a man goes up as a freshman, he has generally done little in the way of track or field athletics, and if he is to make a start it needs a little inducement to render the subject attractive to him. To be left absolutely to his own devices without a competent adviser in the branch he may elect to take up is hardly a way to help matters, and it is more than likely that he will choose a form for which he is not physically fitted, and probably never makes the acquaintance of his true feat. The result, usually, is that he gives up in disgust. The American system provides for competent advisers in the field events, and if a fresh man elects to

become an athlete he is promptly taken in hand and thoroughly grounded in the principles of the contest for which his physique shows him to be adapted. He has nothing to unlearn afterwards, and if he makes a success the fact soon becomes known. Under this system a man grows to take a decided interest in the sports, and is able to utilise his powers to the best advantage.

In the 100 yards race we are invariably beaten, and, more than to anything else, this may be ascribed to the superior condition coupled with the more nervy nature of the American. A defeat in the hurdles, again, we have to look upon as a more

METHOD OF STARTING A SPRINT RACE, INTRODUCED BY AMERICANS.

likely occurrence. The American's sprinting powers serve him in good stead here, but his real superiority lies in his manner of getting over the obstacles. His object is to top the hurdle with the least resemblance to a jump, and he does this by leaving the smallest possible margin between the top bar and himself when going over, taking it in long, skimming strides with body forward. Since the first meeting with Yale in 1895, the standard of English university hurdling has improved considerably, and we are becoming serious rivals of the Americans through the adoption of their style. In any distance over half a mile the bulldog pluck and endurance of the Englishman usually bring him out an easy winner, and these races are always accounted to be at our mercy.

Our weakest points are the hammer throwing and shot putting, two events which have hitherto been regarded in England in an altogether wrong light. Through the poor exhibitions shown the idea has taken firm root that they were athletic exercises in which skill had no part, and, moreover, were tests of brute strength in which mere bodily bulk was an absolute necessity. A different aspect was given to the matter by the American university athletes. Instead of being the type of man popularly associated with hammer throwing and shot putting, they were rather specimens of the true athlete, well and symmetrically developed.

In England a nine-foot circle is used to throw from, and at first sight this would seem to give us an advantage over the American, who has to confine his gyrations within a circle of seven feet diameter. But it is here that, until quite

recently, our ideas have been wrong, as the important consideration for success is that the swing of the hammer should be as nearly as possible round a fixed axis, and the running, translatory movement so much in vogue during the days of the old thirty-foot circle, and which, from its apparent clumsiness and incorrect principle, did much to render hammer throwing unpopular, must be rigidly avoided. With proper utilisation of space, a seven-foot circle is sufficiently large to describe two, or even three, turns in. A slightly forward movement across the circle must be acquired, or the tendency to fall back after delivering the throw will not be overcome. These details can only be learned by the novice through practical demonstrations by one who has a knowledge of the art.

There is no more pleasing sight to the spectator than a skilled hammer thrower, and the periodical outeries against its inclusion in the inter-university sports are only attributable to the sorry performances of the English University athlete. Notwithstanding all outeries, however, interest seems to have kindled, and every year sees the standard of throwing raised. At the recent inter-university meeting the record reached 128 ft. 6 ins. at the hands of A. H. Fyffe, the Oxonian, but this will probably be beaten next year, as both the winner and the Cambridge first string are capable of better things. Fyffe in particular should show considerable improvement. The present Harvard and Yale hammer throwing record is about 153 ft., while that of Harvard is 142 ft. 10½ ins., both having been created under similar conditions, from a seven-foot circle without follow. At Yale Shevlin has done 101 ft. The fact that the American finds the seven-foot circle large enough to describe his turns in is a testimony to his ability and his theory, but nine feet is perhaps a safer size if the triple turn is adopted. The fact remains, however, that the smaller circle is large enough, and it has the advantage of making the thrower careful how he describes his turns, and consequently improves his style.

The correct method of putting the shot is perhaps harder to acquire than that of the hammer throw. Our men at this sport are not one whit worse built than the Americans, and yet our standard is fully eight feet worse than theirs. The cause of this discrepancy is to be found largely in the foot work. The point to master is the reverse, for if the putter pauses one moment too long before launching the shot forth, when his feet have reached the final position before the reverse, he will lose nearly the whole advantage to be derived from the leg thrust. The object is to hop off the right leg so that he alights on both legs almost simultaneously, the right being about in the middle of the square, and the left nearly up to the front line, and the moment they reach the ground (with a sort of clawing action) the shot must be delivered, and the right leg brought round to the reverse. An intelligible description is impossible on paper, and to be properly appreciated the style must be seen put to use by an adept. It is in this action that the American gets what he terms "snap" on to the shot, and the advantage it gives is really surprising.

With intelligent practice we should be able to rival the Americans in both hammer throwing and shot putting by the cultivation of our excellent material. Want of interest is the keynote of our feebleness in this direction. Overcome this and we could become worthy opponents. The shortest way to the goal is by mastering the science of the subject, and the art then follows from practice.

AMERICAN ATHLETES.—Mr. James E. Sullivan, the secretary of the Amateur Athletic Union of the United States, and the leading authority on athletics in America, sailed December 20th for New York. Mr. Sullivan, during his short stay in London, was an interested spectator at several football matches, and was particularly impressed with the entire absence of roughness during the Oxford and Cambridge match. He predicts that the Rugby game as played here, will, by the influence of President Roosevelt, become the future game of the American colleges. Mr. Sullivan intends to return in about a month, when he hopes to form an alliance between the Amateur Athletic Association here, and the Amateur Athletic Union of the United States. In the meantime his interests to that end will be looked after by his able lieutenant, Mr. Wm. J. Kelly, of 2, Hind Court, Fleet Street, himself a well-known athlete.

Some Factors of Modern Beauty.

ABSOLUTE perfection of physique is unattainable, but it is not impossible to reach something near it, and the way to proceed is by keeping the blood, and then the system, in proper working order.

To-day our ideal of beauty is based chiefly upon health, and it requires but a bright, happy, animated face with a good complexion and a real fondness for healthful exercise such as bicycling, golf, swimming, etc., to make the "beauty" of our times.

Irregularity of feature with perfect complexion will sooner make that beauty than perfection of feature and imperfection of complexion.

To keep the skin in proper order a hot bath is necessary, for obvious reasons, at regular intervals. The ancients seemed to realise, even better than we do to-day, the requirements for maintaining the skin at its perfection. Their baths of hot air and vapour, ending with massage, and the application of oil when the skin was dry or irritated, gave their flesh the appearance of tinted marble, and made it firm, soft, and beautiful. These excellent baths, Turkish, Russian, and Roman, are to be had to-day in all the large cities of every country. They should not be taken if the heart or lungs are in any way affected, and not oftener than once in two weeks except under a doctor's recommendation. For curing eruptions of many kinds they are invaluable, besides keeping the skin healthy and warding off rheumatism.

The complexion, however, cannot be kept in order if tight lacing is to be indulged. Fortunately, "Dame Fashion" has altered her decree, and this great evil, one of the chief resources of ill-health.

Another primary cause of ill-health is malnutrition. The health of the body depends upon its food, which, by the way, need not be either craved or even desired to produce beneficial results; but food must be regularly taken, and those which are most easily digested are, of course, of greatest assistance.

A little exercise taken regularly will give better results than if a great deal be taken spasmodically. Systematic exercise is required for physical development and personal beauty.

The secret of health is founded upon thoroughly resting the body. No one can do without plenty of sleep.

Pure air in the bedroom is an absolute necessity. Always keep it well ventilated.

Don't diet yourself. If you are a brain-worker eat anything that agrees with your stomach. If your work is hard manual labour, you should be able to eat anything rational.

A FAIR PHYSICAL CULTURIST.

In sending her photo, she says she does not see why women should not have a place in SANDOW'S MAGAZINE, and hopes other girl and women readers will send their photos for publication.

The Sensations of Starving.

A man who has experienced the pangs of hunger from necessity, and not a volunteer fast, describes the sensations in this manner:

It is during the first two days of hunger that the sufferings of a strong and healthy man are most acute. He feels an inordinate, unspeakable craving at the stomach night and day. On the third and fourth days this incessant craving gives place to a sinking and weakness of the stomach, accompanied by nausea.

Should he chance to obtain a morsel or two of food he swallows it with a wolfish avidity, but five minutes afterwards his sufferings are more intense than ever. He feels as if he had swallowed a living lobster, which is clawing and feeding upon the very foundation of his existence.

On the fifth day his cheeks suddenly appear hollow and sunken, his body attenuated, his colour is ashy pale, and his eyes wild, glassy and cannibalistic. The different parts of the system now war with each other. The stomach calls upon the legs to go with it in quest of food; the legs, from weakness, refuse.

The sixth day brings with it increased suffering, although the pangs of hunger are lost in an overpowering languor and sickness. The head becomes dizzy, the ghosts of well-remembered dinners pass in hideous process through the mind.

The seventh day comes, bringing increasing lassitude and further prostration of strength. The arms hang listlessly, the legs drag heavily. The miserable remnant of life which still hangs to the sufferer is a burden almost too grievous to be borne, yet his inherent love of existence induces a desire still to preserve it if it can be saved without a tax on bodily exertion.

The mind wanders. At one moment he thinks his weary limbs cannot sustain him a mile, the next he is endowed with unnatural strength, and if there be a certainty of relief before him he dashes bravely and strongly forward, wondering whence proceeds his new and sudden impulse.

Had Legs Broken Eighteen Times.

Roy Ball, the ten-year-old boy who has had his leg broken eighteen times, is making remarkable progress toward recovery. His eighteenth accident of a similar sort happened, and already the bones have begun to knit, and it will not be many weeks before Roy will be going to school. But he will no sooner get well from his present uncomfortable experience than another break in the same leg will be due.

During his brief career Roy has been laid up with a broken limb on an average of every six or seven months.

Medical books say that within the last fifty years there haven't been a dozen cases like Roy's in all America. Speaking of the unusual case one of the hospital physicians said:

"The child is suffering from osteogenesis imperfecto, meaning imperfect bone development, from birth, probably. He walked late in life, his first injury being a fracture of the ankle at nine months. The bones of his skeleton are very small and brittle, breaking easily.

"He is now ten years old, and has suffered from eighteen known fractures, mostly of the long bones of the leg, probably with many fractures that have not been noticed. His ribs have also broken frequently, according to the complete history of his remarkable case.

"The instance is a very rare one, and medical science can do little for Roy. As he grows older, however, he may outgrow it all, but he must always be very careful and will never be able to jump and run as other boys do.

"The X-ray pictures show that the leg broken the most times has become exceedingly bowed. This is the right leg, which is now three quarters of an inch shorter than the other. The left leg has been broken three or four times, but is comparatively straight. The bowed condition is responsible for the frequent breaking. The outside of the bone has acquired a prominent ridge from the constant splintering of the bone."

CERTAIN Swedish physicians maintain that whistling will do much towards the development of a robust physical frame.

HOW TO TRAIN FOR FOOTBALL.

. . . By an Old Full-Back. . . .

THE old motto—"Whatever is worth doing is worth doing well"—applies to football as much as to business. Many followers of this excellent exercise seem to have an idea that no training whatever is necessary to win matches, and the consequence is that twenty minutes before the game ends they are practically passengers instead of being able to draw on their reserve strength, and thus often enabling their side to pull a game out of the fire.

The writer remembers a celebrated athletic professor being asked in his presence how to train a football team, and his reply consisted of two words, "Play football." Now, this advice, excellent in some cases, is impossible for many teams to carry out sufficiently to enable them to last out a tough struggle. They are handicapped by their members being engaged until long after darkness has set in, and football played in the dark is a very uncertain and unsatisfactory proceeding. When, however, a good moonlight night arrives, it should be utilised for all it is worth. It is, therefore, necessary to find other methods of tuning the eleven up to concert pitch, and the writer, who has had a deal of experience in this sort of work, will endeavour to give to readers a short description of his methods and their results.

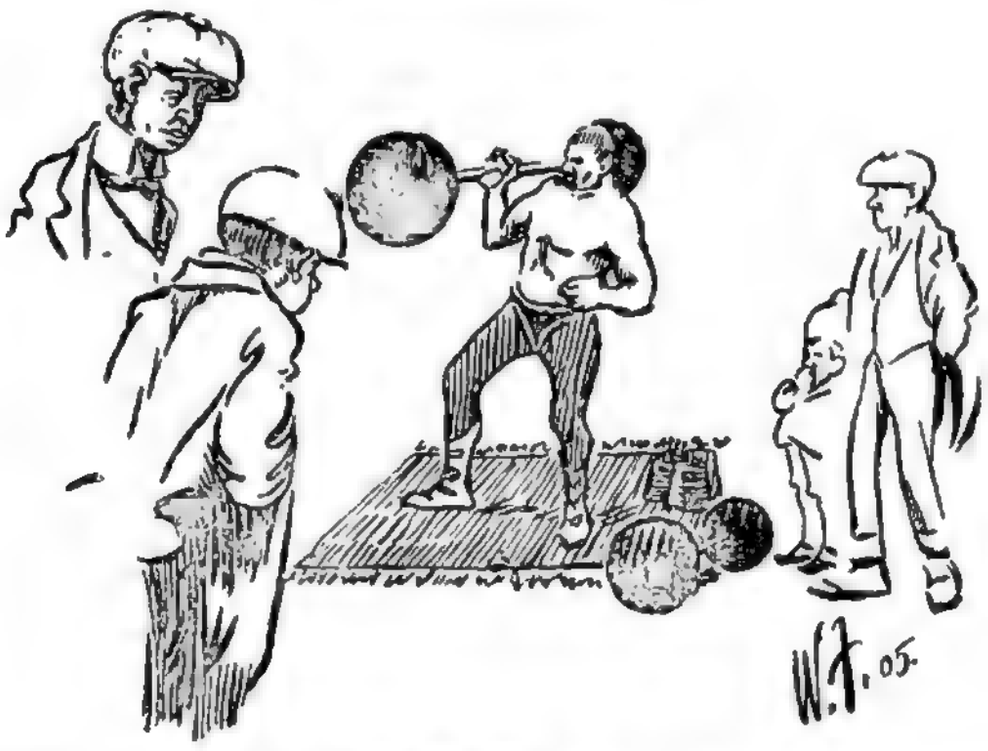
In the first place, it was very rare for us to play a match before the last Saturday in September, the previous weeks being utilised in knocking the members into shape. This is easier when two elevens are run. If not, it is nearly always possible to obtain a few followers who who are willing to assist. In arranging the teams for these practice games it is advisable to select the elevens or fifteens as they will probably play; otherwise half the benefit is lost. The great idea is to make the members combine, and this is well-nigh impossible if the men are opposing each other. Combination is not only necessary amongst the forward line, but must be continued throughout the team; nothing assists a back more than to know the halves' usual method of defence, and any goalkeeper will work twice as well if he is used to the backs' play. During these games the captain should carefully watch his charges, and, if advisable, try a promising new-comer in several positions if he considers these could be strengthened. At half-time a few words of advice are very beneficial, but on no account "nag" a man whilst a game is in progress. It more often than not throws him entirely out of his stride. The final practice game should be carried out exactly the same as a match, and to draw both teams out it is sometimes advisable to give the second eleven a goal or so start; this gives keenness to the players.

It must, however, be remembered that these practice games do not consist of all the training. The club should meet once or twice a week for walking and running exercise, if possible. Tuesday and Thursday evenings are most suitable, and for the first fortnight five miles' brisk walking at each meeting is the best. The most convenient costume consists of football knickers, stockings, stout walking boots, and a good thick sweater. The pace should be about five miles an hour. This can be increased as the men improve. It is needless to say smoking should be tabooed on these expeditions, but if one of the members is

a happy-go-lucky joker, do not forbid his smoking. A good-tempered man is always more amenable to regulations and discipline than he would be if discontented. On returning to quarters, have a good rub-down, and use (in reason) a little embrocation. Watch carefully for strains. The last half of the month, instead of walking, take the team for a run. About the same distance should be covered in the following manner:—Start off at a fairly sharp pace until the second wind has been obtained, then alternately run about a quarter of a mile at a jog-trot, to be followed by about 100 yards' sharp sprint, relapsing again into a steady run for the last half-mile. When matches start, one run a week—say Wednesday—will be sufficient.

It may appear to many that the above are very elaborate preparations for a football season, but, I take it, the wish of every member is to win the matches; and in addition to the satisfaction of doing this they will speedily find they are improving in health, and do not have that half-dead feeling just at the time when extra energy is required. The managers of the team should bear in mind that a decent player who can be depended upon to last out the toughest game is much better to have in the team than one of those brilliant stars who fly the distress signal about ten minutes after half-time. The writer has a vivid recollection of a cup-tie, played some years back, when our opponents crossed over at half-time with four goals lead, yet when the whistle finally sounded there wasn't a couple of men in their team, bar the goalkeeper, who could raise a gallop, and they retired beaten by two goals; yet by their reputation and the manner in which they started we ought to have been fairly wiped out, and, no doubt, had they carefully prepared themselves for the fray we should have been.

In conclusion, remember that no game is lost until time has been called. Impart the same amount, or rather, a great deal more, of energy into the last ten minutes than at the commencement—with only three minutes to go you have still time to increase your score.



1ST BOY: "Owd yer like 'im fer yer farver, Bill?"
2ND BOY: "Not much, matey; 'e'd lay it on a bit too thick fer this 'ere child."

ADVICE TO CONSTRUCTORS OF GYMNASIUMS FOR SCHOOLS.

By E. H. ARNOLD M.D.

GREAT progress has been made in the last few years along practically all lines of school architecture. I am afraid I cannot say as much of the advance made in the construction of gymnasia. To be sure, physical training is a newcomer in a great many of our schools, and the experience in construction of gymnasia is, therefore, limited. Most gymnasia constructed have been in colleges, preparatory schools, Y.M.C.A.'s and kindred organisations. Unfortunately, there has been, with the introduction of physical training in public high schools and grammar schools, imitation of gymnasia of colleges, etc., whereas class work in physical training is the only kind of work practical in the schools; therefore, the conditions for teaching gymnastics differ greatly from the conditions prevailing in gymnasia of colleges, etc., where usually individual work is done.

This imitation without discrimination has not only been unfortunate for the teaching of gymnastics, but it has also perpetuated some very grave errors made in the construction of the gymnasia of some of our leading universities. These errors do not relate to the adaptability of the gymnasium to class-room work, but are chiefly errors in ventilation, heating, and lighting; that is to say, in the very fundamentals of sanitary construction of gymnasia.

Having inspected personally a great many gymnasia throughout the country, and having looked over sketch plans of over one hundred gymnasia, I am impressed by the fact that a type of high or grammar school gymnasium has not developed and does not at the present time seem to be developing. If a great deal of unnecessary expense and failure of the efficiency of physical training are to be guarded against, it is time that such a type should be evolved. If school authorities, architects, and directors of physical training co-operate, there is no reason apparent why such a result could not speedily be accomplished. Not being an architect, but a specialist in physical training, I may be pardoned for thrusting upon you some advice which may not appear to be wisdom.

I hold that for grammar schools provision for outdoor gymnasiums is paramount. A spacious school yard is practically all that is needed to begin with. The ingenuity of the physical trainer and the zeal of the children should, with the co-operation of the manual training department, transform the school yard into an outdoor gymnasium equipped, without expense, with all that is needed for outdoor gymnastics, games, and athletics. Wherever possible, there should be added to this a sun and rain shelter, in the shape of a lightly-constructed shed, borne by high pillars, with a glass side or two, disappearing, if possible, above or under ground. This will serve the purpose of a gymnasium, except on the very coldest days, all the year round, and in almost any clime.

An indoor gymnasium should be spacious, in keeping with the size of the classes that are to make use of it. It should be unobstructed by pillars, at least fifteen feet high, and twenty if possible. A running track is needed in high schools only. A sufficiency of light, preferably from all sides, and good provision for ventilating and heating are essentials. It is at once apparent that the basement will usually not offer these conditions. A desirable height cannot usually be given a gymnasium in a basement. Ventilation and heating, as well as lighting, of a basement gymnasium are difficult. Pillars are practically unavoidable, if very heavy iron truss work is not put in, and this will make the expense of construction of the school house a goodly sum higher. From the view of economy, therefore, the basement gymnasium is once more undesirable.

The proper place for the gymnasium in a high or grammar school is in the garret. This place offers sufficient space which cannot usually be used to great advantage for other purposes. This situation offers practically ideal conditions for lighting and ventilation. Pillars are easily avoided, and sufficient height readily obtainable. The only objection to

placing the gymnasium on the top floor of a school building has been the noise attendant upon gymnastic and athletic practice and the jarring of the building by class work. With the advance in methods for "deadening," noises can be muffled and the jar abolished.

In the construction of a gymnasium for school purposes practically no attention need be given to disposition of apparatus in it beyond two provisions. The first is, that in the rafter or beam-work overhead, be it of iron or wooden construction, be it open or concealed, give sufficient facilities for hanging apparatus such as rings, poles, ladders, etc. In the second place, around the walls on the side of the gymnasium there should be inlaid into the iron or brick-work heavy wooden planks, one tier near the base, one about five feet, and, if possible, one about ten feet, from the floor. This done, the gymnasium may be turned over to the director of physical training, who, if at all competent, can make use of the unlimited chance to fasten apparatus over-head and on the sides of the building to suit the purposes of his teaching.

A CURE FOR OBESITY.

CONVICT: "*These 'ere clothes is too small—they don't fit.*"

WARDER: "*Never mind; they will!*"

A Theory of Muscular Contraction.

DR. EDWARD B. MEIGS, of Philadelphia, has published a book containing a mechanical theory of muscular contraction. He presents proof in support of a comprehensible medical theory of muscular contraction, originally put forth by Dr. W. McDougal, in two articles in the *Journal of Anatomy and Physiology*, 1897-98, in which the latter advocated the hypothesis and the contraction of muscular fibrils is caused by their absorbing some of the fluid sarcoplasm which surrounds them. Dr. McDougal's experiences were mainly with the fibres of the wing muscles of insects. Dr. Meigs submits "the most direct and positive evidences" that during the contraction of frog muscles and fibres "fluid passes from the periphery of the fibres towards the centre." By means of mechanical models made from an air-pump the claim is given optical demonstration. Dr. Meigs concludes with these words: "An adequate account of the reasons for accepting the imbibition hypothesis of muscular contraction would involve a review of the whole subject of the histology and physiology of muscles, which is, of course, utterly impossible in an article like this, but McDougal's articles have hitherto attracted so little attention that it has been necessary for me to give at least a simple statement of that hypothesis in order to make clear all my own observations. They constitute but a small part of the whole body of evidence in favour of the imbibition hypothesis. This evidence is constantly materialising, and will, in the near future, it may be hoped, be presented to the world in proper form."

"THERE are two ways of being happy; we may diminish our wants, or augment our means; either will do; the result is the same; and it is for each man to decide for himself, and do that which happens to be the easiest; if you are idle, or sick, or poor, however hard it may be to diminish your wants, if you are active, or prosperous, or young, it will be harder to augment your means, or in good health, it may be easier to augment your means than diminish your wants; but if wise you will do both at the same time."—BENJAMIN FRANKLIN.

Let a man therefore strive to purify his thoughts. What a man *thinks*, that he *is*; this is the old secret.

Sandow Magazine Readers' Club.

President - - EUGEN SANDOW.

Motto:—One may Help Many.

For the exchange of ideas, personal experiences and photos for the encouragement of Club Members. Every Reader is a Club Member.

Readers are expected to set up to the Club Motto, and for services rendered the President will award to the sender of every published idea, experience or photo, the Club Fellowship Medal as a token that the rightful owner has earned the Fellowship of the Club.

Once a month the names of newly-admitted Fellows will be published under the head of "The Fellowship Roll."

Those already qualified as Fellows and who send further contributions will have attached to their names figures denoting the number of occasions on which they have assisted the Club, thus:—Alfred James (*5), Birmingham (meaning that this is Mr. James' fifth occasion of assisting the Club).

Once Given up by a Doctor.

Preston.

SIR,—I am sending my photo. and measurements to you, asking you to enter me in your Physical Culture competition. I have been measured by a doctor, with a witness present. He measured me as they do in the Army, with muscles unflexed. I might state that at 22 years of age I was given up by the doctor, with Bright's disease, but since starting Physical Culture I have been examined by a doctor, and was certified as sound.

My feats of strength are as follows:—R. hand, 92 lbs.; L. hand, 96 lbs.; a ring, 56 lbs., in either hand; slow two-handed press, 116 lbs., without moving body; two-handed bar-bell, 140 lbs. These were all clean competition lifts.—I remain, yours sincerely,

JOHN HARDIMAN.*

Age	35 years.	Fore arm, L.	9 12-16 inches
Height	5 ft. 1 inch.	Hips	36½ ,,
Weight	7 st. 13 lbs. 9 ozs.	Thigh, R.	17 10-16 ,,
Chest (con.)	31 inches.	Calf, R.	12½ ,,
Chest (exp.)	36½ ,,	Thigh, L.	17 10-16 ,,
Waist	26 15-16 ,,	Calf, L.	12½ ,,
Upper arm, R.	12 4-15 ,,	Ankle	7 10-16 ,,
Fore arm, R.	9 10-16 ,,	Neck	15 ,,
Upper arm, L.	12 3-16 ,,		

Muscles are like Iron.

Woodstock, Cape Town, South Africa.

DEAR SIR,—I adopted your Sandow system in a laughable sort of way. When going out with my mother, she used to say to her friends I was always so weak and delicate that I was quite "fed up" with those words, so that I started saving up my pocket-money for one of your world-renowned developers. My usual exercising time was in the morning—out from a cold tub and then ten minutes with the developer; the same in the evening. I kept this on for about seven months, and am now beginning to feel my muscles are like iron compared to what they were before I started using your system. I belong to the Victoria Boys' Club in Woodstock, and whenever I strip for a friendly bout of wrestling with one of my chums, all the other chaps come around eagerly to feel my muscles. At our club we get your magazine every week, and we see some finely-developed lads in there, all eager to get your gold medals. Says I to myself, "If I could only get one of Sandow's medals I would be the proudest chap in Woodstock;" but there is nothing like trying, and I got my photos. taken, and am sending them to your department to see if I stand any chance.—I remain, yours,

J. ENRICO.*

Age	17 years 8 months.	Fore arm, L.	10½ inches.
Height	5 ft. 6 inches.	Hips	36 ,,
Weight	9 st. 4 lbs.	Thigh, R.	20½ ,,
Chest (con.)	28 inches	Calf, R.	14 ,,
Chest (exp.)	38½ ,,	Thigh, L.	20½ ,,
Waist	30 ,,	Calf, L.	13½ ,,
Upper arm, R.	13½ ,,	Ankle	10 ,,
Fore arm, R.	10½ ,,	Neck	14 ,,
Upper arm, L.	13¼ ,,		

Improved Physique Immensely.

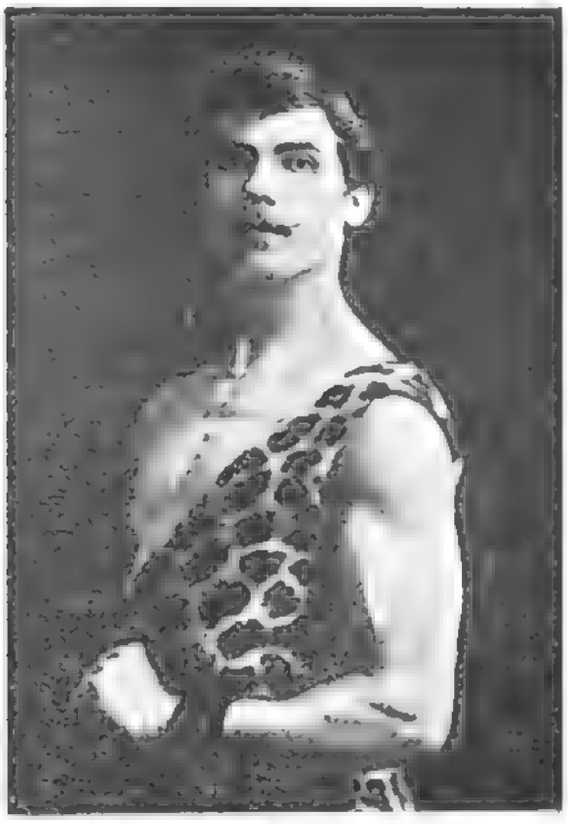
Hawick, N.B.

DEAR SIR,—I beg to say, since I started Physical Culture, I have improved my physique immensely, and know, from experience, the good effects it has upon the body. I bless the day I started to take an interest in home exercise. I have to thank the Sandow system, and my instructor for my present development. I advise everyone to go in for Physical Culture, and, if given a fair trial, it will prove itself a splendid aid to health and strength.—I am, yours,

JOHN BOYLE.*

Age	16½ years.	Fore Arm L.	10½ inches
Height	5 ft. 5 in.	Hips	35 ,,
Weight	8 st. 10 lbs.	Thigh R.	19 ,,
Chest (Con.)	32 inches.	Calf R.	13 ,,
Chest (Exp.)	37 ,,	Thigh L.	19 ,,
Waist	29½ ,,	Calf L.	12 ,,
Upper Arm R.	11½ ,,	Ankle	8½ ,,
Fore Arm R.	10½ ,,	Neck	14 ,,
Upper Arm L.	11¼ ,,		

* *Photos of all these Readers were published in December 14th issue.*



E. J. ADDISON (Ipswich).

Value of Physical Culture in Unhealthy Trades.

36, Beatrice Road,
Ipswich.

SIR,—Having derived considerable benefit from your system of Physical Culture, I hope my "experience" may be of some benefit to other readers of your magazine.

I started training about four years ago with a developer, and later on bought a pair of grip dumb-bells, which I have used ever since. I am a stereotyper by trade, so you will understand the necessity for me to keep in condition. I now find I can get through double the work, with less fatigue.

I only wish other followers of equally unhealthy trades would take up your system of Physical Culture, as I feel sure they would improve their condition by so doing, and also eradicate the impurities from the system.

I have several friends to whom I lend my magazine—one being a well-known doctor in Norwich—and being a reader of some four or five years' standing I have gained considerable knowledge on the human body and its care.

I enclose a photo which I hope you will think good enough to publish in your magazine, as it is very rare I see one from Norfolk. Wishing you and your valuable magazine every success, yours sincerely, E. J. ADDISON.

His Evolution.

64 Doddington-street,
Salford.

DEAR EDITOR,—In a few brief sentences I shall try to explain the evolution of myself by the system of Physical Culture devised by Sandow.

(1) To return a few years backward, I was a weakling (inclined to consumption). My family doctor had given up hopes, and had informed my parents that I would not exist until I was 20. Being somewhat alarmed, I naturally looked round for something more hopeful. A friend then lent me a copy of SANDOW'S MAGAZINE, in which I read that by systematic exercise the body could be strengthened against disease. This was truly hope. A half-crown then spent on the book, "Strength and How to Obtain It," opened the way for me.

(2) With the anatomical chart pasted upon the bedroom wall, I commenced the course with a pair of dumb-bells weighing 2 lbs. each, with open windows, taking plenty of fresh air. I exercised 10 minutes morning and 20 minutes evening, following with a cold sponge-down—a bath not being available. This was continued for twelve months, the weight of bells then being increased to 4 lbs.

(3) The first year's progress was slow as far as muscle production goes, but I was at the time making a strong, healthy pair of lungs, etc.

I have kept this exercise up, and the photographs No. 1 (1901), No. 2 (1903), and No. 3 (1905) will show progress made. I did not keep a record of measurements, but, now, I am 5 ft. 7 in. in height, 8 st. 8 lbs. weight; chest, 32 in. contracted, 41 in. full expansion; biceps, 13½ in.; calf, 13¾ in.

In 1903 I commenced weight-lifting practice from "Sandow's Chart." In January, 1905, I won first prize in open competition with 107 lbs. right, 104 lbs. left, 122 lbs. two dumb-bells, 146 lbs. bar-bell.

I was also second in 9 st. wrestling, giving away a stone in weight.

On the cinder track I have had a varied success, my hardest race being in one heat in the 220 yards handicap at the City Police (Manchester) Sports. I was on 12 yards, and was just beaten in very fast time. R. Wadsley, then champion, was the ultimate winner.

(4) I now have the pleasure of being president of the Manchester branch of the Health Society, devoted to the development of health and strength of mind and body (*mens sana in corpore sano*).

I have been for the season hon. instructor in exercise to the Salford Mission. In my business I have purchased dumb-bells for twelve of my companions, and many who know my case have been encouraged. I have also endeavoured to benefit my fellow-beings by writing, my published articles being "Mind and Muscle," "Going to Bed," "What is Muscle?" and "Childhood and Physical Culture."—I am, yours sincerely,

HY. HYDE WOODCOCK.

Had Just about Enough of Debility.

Ashford, Kent.

DEAR SIR,—I read in this week's issue of your most welcome magazine that you are offering a prize of books to the value of ten shillings, and as I think I stand a good chance of winning a prize I'll "do it now."

My reason for taking up Physical Culture: About eighteen months ago I got very much run down, and after trying all kinds of patent medicines (which made me feel worse than ever), I had the finest bit of luck a fellow could have—a friend of mine gave me a pair of your spring grip dumb-bells for a birthday present, and also lent me the book, "Strength, and How to Obtain It," written and beautifully explained by yourself. Well, I had had just about enough of "Debility" and 1s. 1½d. boxes of nerve destroyer, so I set to work at once, and after about a month's hard work with the "bells" I began to feel a different chap, and I have steadily got better, until to-day I feel very fit indeed.

Yes, I have got others to take up Physical Culture. I have bought six developers and sold them to my chums at a reduced figure on purpose to get them to make a start, and am happy to say we are all "going strong" at the exercises.

About two months ago I started a "Gymnasium" in the Church House Club at Ashford, and that also is going strong. I have got no less than thirty-two members, and I sincerely hope I shall have fifty-two before long, especially when they see the improvement which I hope will be made in the physique of the present members.

Even if I do not win a prize I shall at least have had the pleasure of writing to my ideal man.

Believe me to remain yours for health and strength,

H. ANDREWS.

P.S.—My measurements are as follow:—

Age	23 years.	Fore arm, R....	10 inches.
Height ...	5 ft. 9½ inches.	Upper arm, L.	11¼ "
Weight	9 st. 10 lbs.	Fore arm, L. ...	9¾ "
Chest (con.) ...	33 inches.	Hips	33¾ "
Chest (exp.) ...	37 "	Thigh, L. and R.	20 "
Waist	28 "	Calf, L. and R.	13 "
Upper arm, R.	12 "	Neck	15 "

Coalville Vicar on the Sandow System.

The Rev. F. G. Copeland, Vicar of Coalville, Leicestershire, visited the Christchurch Physical Culture Class during exercise one evening, some time ago, and witnessed a mass drill on the Sandow System, among other exercises, by the members, under the instruction of Prof. H. E. Brown, instructor at the All Saints' Physical Culture Class.

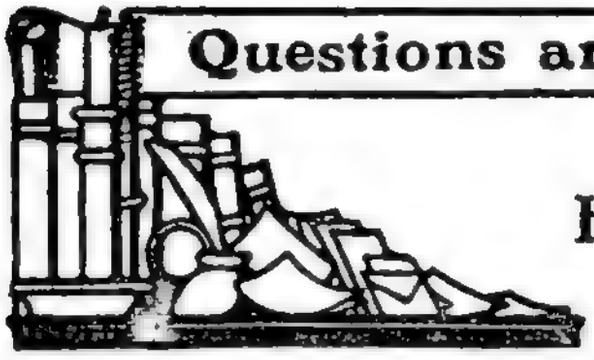
In an impromptu address to the members afterwards, he commented on the excellence of the Sandow System as a muscle builder, emphasising at the same time the importance of breathing exercises as a road to a good old age.

Continuing, he said that when an athletic young man he was taught on the old-fashioned system in the gymnasium, to perform various and mostly difficult feats on the rings, parallel bars, horizontal bars, vaulting horse, trapeze, etc., but breathing exercises were entirely ignored. That state of things, he was pleased to say, had passed away, and he hoped the members of the class would value the instruction in these breathing exercises, the value of which could only be estimated by those who valued a healthy pair of lungs.

The reverend gentleman, who has been a veritable globe-trotter, and a close student of the social conditions of humanity, and who possesses a splendid private collection of native implements of war, collected by him on his travels, also spoke on the advantages of a knowledge of self-defence, and finished his address with the following interesting anecdote:—

"During my ministry in Australia among the mining camps, in a part of the country where the roads are very bad and mingle with the dense, thick bush, and where camps are separated by a distance of two miles or so, and bush robbers are plentiful, I was returning home one day from a visit to an outlying camp, through the thick bush, when, on turning a sharp bend I suddenly came across two seedy-looking men, who, on beholding me, nudged each other, and forthwith parted, each on either side of the road. But I was not to be caught in such a trap; so, bracing my back against a tree on the edge of the bush, I clenched my fists, and called out to the men who were advancing towards me, "Stand! The first man who comes near me, I'll knock him down!" It had the desired effect on the men, who fell back when they saw my attitude and determination in showing fight. Then, as they whiningly begged for alms, I, who am supposed to preach charity, gave each man a shilling, and they departed. I afterwards learned that they were desperate characters, who were being hunted for by the police, whilst it no doubt was the feeling that I was able to defend myself that probably saved me from a worse fate."

TYNESIDE PHYSICAL CULTURE SOCIETY.—A successful wrestling tournament was held in the Geographical Institute Gymnasium, St. Mary's Place, Newcastle-on-Tyne, on Saturday, November 25th. The chief event was a match between P.C. Olsen (the society's instructor) and E. Rule, of Gateshead, in the catch-as-catch-can style. This resulted in another victory for Olsen who thus won the gold medal. Sergeant Dryden (4th D.L.I.) gave an excellent exhibition of single-stick work, assisted by C. A. Cook. In the open competition, for men under 13 st., in catch-as-catch-can wrestling, there were eight entries, and one of the most interesting and keenly-fought competitions ever seen in Newcastle took place. Details—Heat 1: C. A. Cook (T.P.C.S.) beat P.C. Olsen in 9 min. 37 sec. It is only fair to Olsen to state that he was conceding over 2 st. in weight to his opponent. Heat 2: W. Reid (T.P.C.S.) beat R. Yates (T.P.C.S.), 5 min. 46 sec. Heat 3: J. Venables (Felling) beat J. Tatham (Manchester). Heat 4: A. Tatham (Manchester) beat D. B. Stewart, 4 min. 28 sec. Semi-finals: W. Reid beat C. A. Cook, 10 min. 2 sec. A. Tatham beat J. Venables, 11 min. 28 sec. Final: W. Reid and A. Tatham, after wrestling twenty-one minutes without a fall, mutually agreed to postpone the final till Saturday, Dec. 9th. Mr. J. J. Holmes officiated as referee, and Mr. A. L. Sharp (director T.P.C.S.) acted as timekeeper.



Questions and Answers

— AND —

Hints from Sandow.

ALTHOUGH I have opened these pages for the purpose of coming into closer touch with my friends and readers, you must remember that space is limited, and I *cannot* prescribe courses here.

All communications relating to instruction by post should be addressed to me at Basing House, Basinghall Street, E.C., and these will receive prompt attention.

Ordinary replies cannot be answered by post.

W. C. SMITH (LEICESTER) writes: "I take this opportunity of writing to you to tell you of the great improvement in your magazine since you have returned home again. When one reads your magazine, one is apt to get very enthusiastic in regard to health and strength, and it is here that a good deal of harm may be done if one has no knowledge as to the right method of obtaining it. It is here, too, that often the main organ of the body gets weakened. I want to suggest that you print in your magazine a series of exercises for strengthening the heart, as I think that weakness of the heart is as rampant as consumption. If you decide to do this you will not only benefit your readers, but the public at large. Hoping this will meet with your approval, allow me to wish you the compliments of the season, hoping that your work in the New Year will be more glorious than ever, I remain, yours for health and strength."

Answer: I have noticed a steady increase in heart weakness of late years. This, however, I attribute to want of development, rather than to over-development. For one that is injured in the latter way, 99 are injured by want of development. However, I will publish something shortly bearing upon this matter.

H. W. (COLWYN BAY): "I should be very glad if you could tell me if I could cure myself of stammering by using one of your developers. I am not able to afford your course of instruction by post, nor am I able to go to any of your classes. I have suffered from stammering and extreme nervousness all my life. At present I am very bad. I have one of your developers now, but as I have only just started there is no sign of improvement. I should also be very glad if you could tell me what is the best thing to do about taking baths. For some time now I have been taking a warm bath in the morning, followed by a cold one. Is this a good or a bad thing to do?"

Answer: You remind me somewhat of the little boy who plants a bulb and pulls it up a few minutes later because he wants to see how much it has grown, when you state that you have only just started, but "there is no sign of improvement yet." The improvements will manifest themselves "H.W.," if only you will do as others whose powerful personalities now adorn the magazine. Stammering is very often a nervous affection and a habit too. Physical training will correct the nervous disorders and also help you to break the habit. As regards the bath, this resolves itself into a question of what suits you best. Physiologically, the cold water bath only is the best, when the bather possesses sufficient strength and recuperative power as not to excite unfavourable symptoms, such as numbness, headache, heart palpitation, and body tremors.

P. B. H. (WALTHAMSTOW) writes: "I would esteem it a favour if you would kindly let me know which is the strongest legged—the knock-kneed, bow-legged, or a straight-legged person—as I have an argument on the matter."

Answer: The legs support the weight of the body perpendicularly, so the straight leg is the strongest. The bow-leg is stronger than the knock-kneed leg, because a curve is stronger than a sharp angular bend out of the line of resistance.

MUSCLE.

A Natural Method of Curing Illness without the Employment of Medicine or Drugs.

. . THE .

Sandow Treatment

And its Beneficial Effects on the Muscular & Nervous System.

In reality, muscle plays a very important part in the health of the body and upon the condition of the muscular tissue surrounding the various organs depends whether a person is healthy or ill.

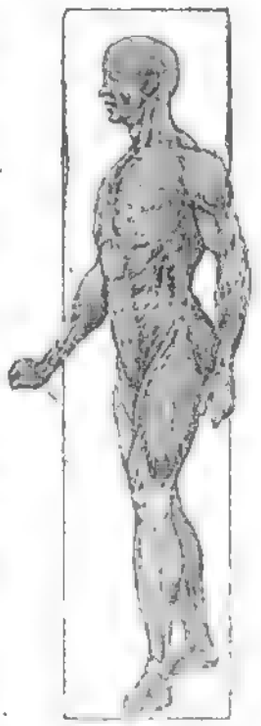
It must be remembered that the great organs of digestion and evacuation are all enveloped in and operated by muscle.

Nervous ailments are notoriously difficult to cure. Yet in all cases of nervous disorders the Sandow Treatment has proved itself an absolute remedy. Why is this?

Simply because the treatment is based on a thorough understanding of this most delicate portion of the body, and only natural means are employed in restoring it to health.

Every nerve ends in muscle, and unless the nerve itself and the muscle are washed by rich, healthy blood, disease ensues.

Nervous Breakdowns.—Whenever a breakdown takes place there will be pain and discomfort. In order to cure, the exact area where the nerve is must be discovered; then, by skilfully directed movements, a regular supply of pure blood must be caused to travel to the spot. This is precisely why the Sandow Treatment is so successful. No medicine or drugs are employed, and instead of pampering the diseased nerve, it is toned up to a sound, healthy condition.



NERVES.

Thousands of sufferers from such ailments as **indigestion, constipation, insomnia, loss of vigour, and various nervous and functional disorders** have already found relief and cure from a course of the Sandow Treatment.

INVITATION TO INVESTIGATE.—If you are a sufferer from any of these illnesses you, too, can be cured quickly and permanently. The treatment entails no inconvenience, and is endorsed by leading medical men.

Those who are the victims of any of these ailments will be interested in Sandow's Book on "Curative Physical Culture," which describes the treatment fully, and a copy of which will be sent free to all applicants describing their ailments, so that a thorough investigation of the methods and results is made before it is undertaken. Write at once for a copy to EUGEN SANDOW, **Dept. S., 17, Basinghall Street, London, E.C.**

THE HABIT OF HAPPINESS.

Senator Beveridge, in a magazine article, urges people to "get into the habit of happiness." Anybody can do it, he says. "Practice saying to yourself when you waken in the morning: 'Everything is all right'—and keep on saying it. You will be surprised how nearly 'all right' the mere saying of it at the beginning of the day will really make everything."

Senator Beveridge's standpoint is that of a man of buoyant, optimistic temperament. Some are born happy. Mr. Beveridge was. He was not born with a gold spoon in his mouth. It looked more like pewter. He knew the pinch of poverty. He had a hard struggle to attain his present high position. But it is safe to say that during the whole time he was cheerful and hopeful. It was his nature, and it is the nature of many, most of whom, perhaps, do not fully appreciate their good fortune. Others are born unhappy. They have a predisposition to misery as truly as some have a predisposition to consumption. They are congenital pessimists, "born unto trouble as the sparks fly upward," and it is much harder for them to be happy than for the optimists.

Senator Beveridge also speaks from the standpoint of a man who has won. Many have lost. Perhaps it is their fault, but that does not increase the pleasantness of their reflection. Perhaps it is not their fault. Honesty and perseverance usually succeed, but not always. They may be joined to small ability. Intellect, ambition, character and persistency united sometimes are balked by ill health. Whatever the cause of his failure, the aspiring man who has been thwarted finds the habit of happiness harder to get than either the one who has not aimed high or the one who, aiming high, has hit his mark.

Happiness is largely a matter of health. Weak stomachs and torpid livers seldom kill, but they often make hypochondriacs. The man who can be perfectly serene and hopeful when his system is full of bile, and the buildings, and trees, and people around look alternately black and yellow, has that "perfected self-mastery" which Aristotle praised as the *ne plus ultra* of virtue and philosophy. The dyspeptic's road to happiness lies by way of fresh air and exercise.

But Senator Beveridge's advice is good, despite the difficulty many men have in following it. The bodily and mental states do not depend entirely, but they do depend largely, upon the will, and the man or woman who resolves to be happy, let what will come, and sticks to it, is pretty sure to be happy, or, if not happy, at least less unhappy than if the resolution had not been made. And if one can get the happiness habit it is his duty to do so.

Dr. Sigismund Cohn says the fundamental treatment of habitual constipation is the regulation of the diet. He advises the use of foods sufficiently coarse of fibre to make the amount of bulk necessary to cause physical stimulation of the intestines, and containing the primary constituents needful for the formation of organic acids to cause the chemical stimulation of the intestines. As an example, breakfast may consist of fruit, a cereal with cream and sugar, bread, with much butter, and, if desired, some meat and eggs. Dinner: soup, meat or fish, plenty of green vegetables, as spinach or cabbage, beets, turnips, potatoes, beans, peas, and again rye bread and butter: for dessert a saucer of prunes or pudding. Supper should be rather light, and may consist of cold meat, bread and butter, and some stewed fruit, prunes and plums preferred. Of course, it is also necessary that any bad habits be corrected and that water be taken liberally, at least six or eight glasses in twenty-four hours. This, he says, combined with the right physical therapeutics, will give most brilliant results.

Bodily Shrinkage in Old Age.

Interesting experiments are communicated to the *Revue Médicale* by Dr. Parisot on the decrease in stature which, as is well known, the human frame generally undergoes in the decline of life.

Dr. Parisot conducted his observations at the St. Julien workhouse at Nancy. The subjects numbered 60, ranging in age from 64 to 92. They were all healthy individuals, and belonged to the artisan class. The measurements taken were compared with the figures registered at the time when the old veterans, as youths, were called up for military service.

The results were that 28 subjects had lost an inch or less in height. In nine cases the difference was barely measurable. Nine old men showed a decrease of 1 1-5 in.; eight of 2 in.; seven of 2 2-5 in.; and eight of 3 3-5 in.

Dr. Parisot found the loss to be independent of age or trade. One subject of the nine, who had lost 1 1-5 in., was 88 years of age, while the greatest shrinkage, 3 3-5 in., was noticed in a man of only 64.

The weight also undergoes a decrease, but there seems to be no hard and fast rule. Dr. Parisot found that some old men, under favourable conditions, would put on from 1½lb. to 3lb. in a month or two, but after that remained stationary.

The Phenomena of Hypnotism.

The Hon. Everard Fielding, hon. sec. of the Society for Psychical Research, said in a recent lecture at Chelmsford that one main result of recent research has been to make us increasingly aware of the importance of the sub-conscious personality—the self that acts, as it were, automatically, while our conscious thought is, perhaps, absorbed in quite other work. After giving instances of the existence in many people of this sub-conscious self, the lecturer proceeded to quote striking instances in which this sub-conscious self had, at times, and especially in an hypnotic state, come to the top, submerging the consciousness that is generally dominant. The recognition of the fact that a single man may have two, or even three, different layers of consciousness, one under the other, any one of which may, under special circumstances, come to the top and be temporarily dominant, helps us to understand the phenomena of hypnotism, the curative power of what is called "suggestion" in the case of sickness, and much else that has perplexed inquirers. After dealing with telepathy, of the reality of which he considered that there is some (though not very much) tangible proof; and spiritualism—the current theory of which he rejected, though some of the phenomena may be genuine—the lecturer concluded by a warning against the immense mass of private and professional humbug that accompanies the whole subject, and with an intimation that, though the Psychical Research Society is still investigating a mass of curious phenomena, from which much may be learnt, he is not prepared to maintain that they have, as yet, obtained any reliable evidence supplying what they sought—knowledge of the world beyond the veil.

That man I think has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold logic engine, with all its parts of equal strength and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of Nature or of art, to hate all vileness, and to respect others as himself.—HUXLEY.

Digitized by Google

OUR READERS' LIBRARY.

	Post Free. s.	d.
SCIENTIFIC BOXING. By James J. Corbett. With fifty full page illustrations ...	0	7½
SCIENTIFIC BAG-PUNCHING. By Champion Harry Seeback. With thirty-two full page illustrations	0	7½
PHYSICAL CULTURE.—By Prof. Edward Ittmann. With twenty full page illustrations	0	7
OFFICIAL BASE-BALL GUIDE. John J. McGraw. With thirty full page illustrations ...	0	7½
JIU-JITSU: THE JAPANESE SYSTEM OF PHYSICAL CULTURE. By M. Obashi. With thirty-five full page illustrations ...	0	7½
JIU-JITSU TRICKS. By K. Saito. With fifty-two full page illustrations ...	1	1½
PHYSICAL CULTURE FOR WOMEN. By Belle Gordon. With thirty-two illustrations	0	7½
ARMY EXERCISES. By Frank Idone. With twenty-four illustrations	0	7
SCIENTIFIC WRESTLING. By G. Bothner (Champion Light-weight of the World). With seventy-three full page illustrations	1	2½
BOXING: AND HOW TO TRAIN (Just Published). With sixty-three full page illustrations. The most complete book ever issued on Boxing	1	1½
CLUB SWINGING. By Gus Hill and Tom Burrows (World's Champions). With thirty-four illustrations	0	7½
DUMB-BELL EXERCISES. With thirty full page illustrations	0	7
THE OFFICIAL BOOK OF RULES FOR ALL SPORTS. With nineteen full page illustrations	0	7½
SWIMMING. Illustrated. By Montague A Holbein	1	2½
CRICKET. By C. B. Fry and other eminent cricketers	1	2½
TRAINING FOR ATHLETICS AND GENERAL HEALTH. By Harry Andrews	1	2½
ANGLING IN RIVERS, LAKES & SEA. Illustrated. By W. M. Gallichan	1	2½
ASSOCIATION FOOTBALL. By J. L. Jones, Captain of Tottenham Hotspur ...	1	2½
RUGBY FOOTBALL. By Jerome J. Rahilly ...	1	2½
MODERN PHYSICAL CULTURE. Illustrated. By C. Lang Neil	1	2
BOXING. Illustrated. By A J. Newton ...	1	2½
DUMB-BELLS, CLUBS AND BAR-BELLS. With 150 illustrations. By A. G Lammas, Sergt.-Instructor, Army Gymnastic Staff	1	2½
WALKING. Illustrated. By C Lang Neil	1	2½
ROWING AND SCULLING. Illustrated. By W. G East, Barge-master to His Majesty King Edward VII.	1	2½

All Orders executed by return of Post.

Address: MANAGER, SANDOW'S MAGAZINE CO.,
131 Temple Chambers,
Temple Avenue, London, E.C.

AMUSEMENTS.

THEATRES.

ADELPHI—At 8.0, "A Midsummer Night's Dream." Mat. Wed. and Sat. at 2.

APOLLO—At 8-15, "Mr. Popple." Mat. Sat. at 2-15.

CAMDEN—At 7-45, "Dr. Wake's Patient." Mat. Sat. at 2-30.

CORONET—At 8, "Beauty and the Barge." Mat. Wed. & Sat. at 2-30.

COMEDY.—At 8.30, "The Little Father of the Wilderness," 9, "The Mountain Climber." Mat. Wed. and Sat. at 2-30.

COURT—At 8-15, "Man and Superman." Mat. Wed. at 2-30.

CRITERION—At 8.30, "The White Chrysanthemum." Mat. Wed. and Sat. at 2-30.

DALY'S—At 8.30, "The Little Michus." Mat. Sat. at 2-30.

GAIETY—At 8, "The Spring Chicken." Mat. Sat. at 2.

GARRICK—At 8-0, Mr. Arthur Bourchier and Miss Violet Vanbrugh in "The Merchant of Venice." Mat. Wed. and Sat. at 2-0.

HAYMARKET—At 8-30, "The Indecision of Mr. Kingsbury." Mat. Wed. and Sat. at 2-30.

IMPERIAL—At 8-15, "The Temptation of Samuel Burge"; at 8-45, "The Perfect Lover." Mat. Wed. and Sat. at 2.30.

LYRIC—At 8.15, "The Blue Moon." Mat. Sat. at 2.15.

MARLBOROUGH—At 7-45, "The Freedom of Suzanne." Mat. Thurs. at 2.30.

NEW—At 8.30, "The American Widow"; at 9.0, "Captain Drew on Leave." Mat. Wed. and Sat. at 3.

SCALA—At 8-15, "Mrs. Grundy." Mat. Sat. at 2-15.

VAUDEVILLE—At 8-15, "The Catch of the Season." Mat. Wed. and Sat. at 2-15.

WYNDHAM'S—At 8-45, "Public Opinion." Mat. Sat. at 2.30.

WALDORF—At 8.30, "La Main"; 9, "Lights Out." Mat. Wed. and Sat. at 2-30.

VARIETY THEATRES.

ALHAMBRA—At 7-45.

COLISEUM—At 3, 6, and 9

EMPIRE—At 8-15. Mat. Sat. at 2-15.

LONDON HIPPODROME—At 2 and 8 p.m.

OXFORD—At 7.30. Sat. Mat. at 2-20.

PALACE—At 7-45. Mat. Sat. at 2-0.

LONDON PAVILION—At 7-30. Sat. Mat. at 2-15.

TIVOLI—At 7-35. Sat. Mat. at 2-15.

LYCEUM—At 6-30 and 9-0. Mat. Mon. and Sat. at 2-30.

ENTERTAINMENTS.

ST. GEORGE'S HALL—At 3 and 8.

HENGLER'S ROYAL ITALIAN CIRCUS.—At 3 and 8.

Digitized by Google

OUR

READERS' LIBRARY.

EXERCISES for the HAND and ARM.

FOR PIANISTS.
FOR THE CURE OF WRITER'S CRAMP.
FOR PARALYSIS AND NERVOUS DISEASES OF THE HAND AND MUSCLES OF THE FOREARM.

Post Free, 1/2.

Sandow's Strength: And how to obtain it.

THIRD EDITION.

	s.	d.
With Anatomical Chart showing the Exercises for Physical Development of Men, Women and Children. Mr. SANDOW has thoroughly *Revised* and brought up to date the present editions and has also added much additional matter, including chapters on "Physical Culture for Women" and "Physical Culture for the Middle Aged" ... ... Post Free...	2	9
The Anatomical Chart can be obtained separately from the book 1/1 or mounted on linen ... ... Post Free...	1	7

BOXING: The modern system of Glove Fighting.

By Captain EDGWORTH JOHNSTONE ... ... Post Free... 2 9

BODY BUILDING. (Just Published) Post Free... 1 3

HINTS FROM SANDOW.

(Revised Edition). By the Rev. R. L. BELLAMY ... ... Post Free... 1 2

"A book which points out in a most interesting way that health and strength of body go hand in hand with health and vigour of mind."—*Manchester Courier.*

THE ART OF BREATHING.

By SURGEON-CAPTAIN HOPER-DIXON, A.M.S. ... ... Post Free... 1 1

DEVELOPER. 12/6 each. One will serve a whole family.

GRIP DUMB-BELLS.

Children's ...	5/- per pair.	Youths' ...	10/6 per pair.
Boys' and Girls'	7/6 ,,	Ladies' ...	10/6 ,,
	Men's ...	12/6 per pair.	

Embrocation. 1/4½ per Bottle, Post Free.

Plasmon Cocoa. Per Tin, 9d., 1/4, 2/6.

Symmetrion. For Ladies, 12/6

Plasmon Chocolate. Per lb., 3/-, 5/-.

All Orders executed by return of Post.

ADDRESS: MANAGER, SANDOW'S MAGAZINE CO.,

131 TEMPLE CHAMBERS, TEMPLE AVENUE,

LONDON, E.C.

"The Most Perfect Form of Cocoa."
Guy's Hospital Gazette.

Fry's Cocoa

..PURE..
CONCENTRATED

FRY'S PURE CONCENTRATED COCOA—
"The Richest in flesh-forming and energy producing constituents. There is no better food."—Dr. Andrew Wilson, F.R.S.E.

THE OLDEST HOUSE IN THE TRADE. *Estab. 1728.*

LOOK OUT FOR

Next Year's New Volume.

FRESH FEATURES.
POPULAR WRITERS

UP-TO-DATE ARTICLES
ON PHYSICAL CULTURE.

Each succeeding Volume is better than the last.

Forward your . . . Subscription to the MANAGER: 131, Temple Chambers, LONDON, E.C.

One Year, 10/6 ✕✕ Half Year, 5/6. Post Free.

Printed by THOMAS & BURCHELL, LTD., High Street, Poplar, and Published by the Proprietors at 131 Temple Chambers, London, E.C.

Digitized by Google